

Photoshop

FocusGuide

Complete Tool Guide



- ✓ Every image-editing tool, palette and command explained
- ✓ Includes all the new features in Photoshop CS3 and Elements 6
- ✓ All the know-how you need to get your photos perfect every time



132 pages of easy-to-follow tutorials and expert advice to help you develop your Photoshop skills



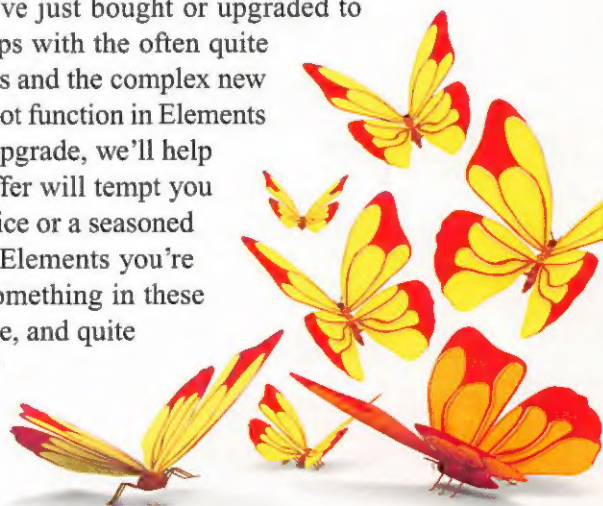
Get to grips with the toolbox

A bit hazy about Blurs? Need to brush up on your brushes? We're here to help you master the toolbox in Photoshop and Elements

Do you know how many tools there are in Photoshop or Elements? Probably not too many to count, to be honest, but every time we try we always seem to stumble upon something unfamiliar and intriguing, a tool or option too interesting to pass by without exploring just a little bit... and before we know it, we've lost count and are instead spending time playing. Part of the problem (if it *is* a problem) is that you can't really look at tools without also looking at their options, and the palettes you use to manage them, and related commands... Then, to top it all, Adobe goes and releases new versions of Photoshop or Elements with more features and new tools to get lost in...

This Focus Guide aims to make sense of it all. It's not a dry manual full of specifications and jargon, but it's not about just playing with the software either. This guide to the tools and options in Photoshop and Elements is organised according to the image-editing tasks you'll be performing. So after an introductory look at the interfaces of the programs and some basic concepts, we look at the tools and commands relevant to making and using selections, then at layers, then at general tonal adjustments, and so on. In each chapter, we won't simply be giving you a list of names – we'll give you practical advice and guidance on how to use each tool, what the options mean in practice, and how to get the very best results from them.

As we go, we'll make a point of looking in detail at the new features in Photoshop CS3 and Elements 6. If you've just bought or upgraded to either of these, we'll help you get to grips with the often quite confusing changes from previous versions and the complex new features such as the Photomerge Group Shot function in Elements 6. If you're just considering whether to upgrade, we'll help you assess whether the innovations on offer will tempt you or turn you off. But whether you're a novice or a seasoned user, whatever version of Photoshop or Elements you're using, we're willing to bet you'll find something in these pages that you haven't encountered before, and quite possibly something you'll want to try playing with...





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Finding your way

Our handy icons hold the key to a wealth of additional information, both in your Focus Guide and on the disc

Where do you start? With so much to tell you about the whole range of tools in both Photoshop and Elements, it's difficult to find enough room for all the information we want to pack in, and that's why you'll find the sidebars that occupy the margins on each page so useful.

As you leaf through the pages, you'll notice that these sidebars are headed by a range of eye-catching symbols, to help you to identify exactly what kind of information

you're dealing with – for a guide to icon categories, see below. These hints and tips are always relevant to the topic that's being discussed, and will help you master all the tools and techniques that little bit faster.

Our writers are all experienced Photoshop experts who regularly contribute to our sister magazines, such as *Digital Camera Magazine* and *Computer Arts*, so you can rest assured that all the information they provide is both authoritative and thoroughly tried and tested.



Key commands

When we describe keystroke shortcuts in this Focus Guide, we'll refer to modifier keys by their names in square brackets, with the Windows shortcut first and then the Mac equivalent. [Command] is the key with an apple or 'four-leaf clover' symbol. So [Ctrl]/[Command]+[Shift]+I means "On a PC, hold down [Ctrl] and [Shift] and press I; on a Mac, hold [Command] and [Shift] and press I."



On your CD

Video tutorials, trial software, and much more are included on your CD. Every now and then we remind you of this by flagging up the disc icon and listing the disc contents relevant to that page.



Take note

You'll find these nuggets of knowledge scattered throughout every Focus Guide. Every one contains useful information that you should bear in mind while reading or following the instructions on that page.



Top tips

This indicates an expert tip. Anything sheltered beneath this icon is guaranteed to reveal a useful tip or advice about Adobe Photoshop's or Photoshop Elements' range of tools, options and features.



Watch out!

The 'skull and crossbones' sign means that you should proceed with caution. You'll find some important points outlined below this icon, which you should certainly take seriously.



Further information

This icon indicates additional information that complements the main text on the page. We may also refer you to other useful resources – such as websites and specialist books – for further reading.



Links

When we refer to a website, we may pull out the web address in the sidebar to make it easier for you to read and remember.



Shortcuts

Carrying out common tasks again and again can get a little tedious. Our handy shortcuts show you how to perform these tasks with a few deft key-presses, saving you lots of time and effort.



Photoshop version

Where there are differences in the way that Photoshop Elements, or older versions of Photoshop, handle particular tasks, or if certain tools are located in different places in the interface, this icon will alert you.

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Chapter 1

GET TO KNOW PHOTOSHOP AND ELEMENTS

In this chapter...

- ☐ Explore the Photoshop interface and CS3's new workspace features
- ☐ Find out when to use the different editing modes in Elements
- ☐ Learn shortcuts for navigating your images and selecting tools
- ☐ Discover how to resize images and how to get the best results when printing them out

We'll begin by introducing the Photoshop and Elements interfaces, and in particular the latest versions, then show you how you can edit, get around, resize and print your images efficiently

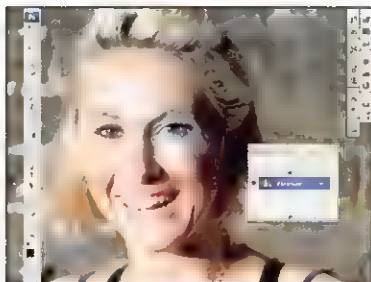
However advanced your camera may be and however good your photographic skills, you'll find that most images will benefit from some post-capture editing. You'll often want to tweak brightness levels to create a better-balanced tonal range, and you may also need to tackle problems such as colour casts. So which should you be using, the professional-level, 'full-fat' Adobe Photoshop or its 'lite' counterpart, Photoshop Elements? (To minimise confusion, we'll be referring to the latter as 'Elements' and the former as simply 'Photoshop'.)

Well, the first thing to note is that the two programs have a great deal

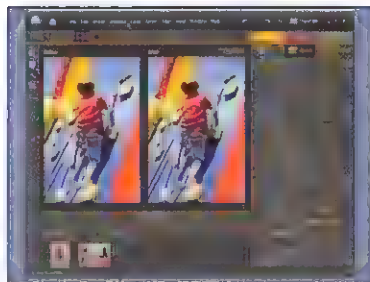
in common. Most of the tools and techniques we'll be looking at in this Focus Guide are available in both, and indeed in most versions of both (Photoshop CS2 as well as CS3, or Elements 5 as well as 6).

Latest and greatest

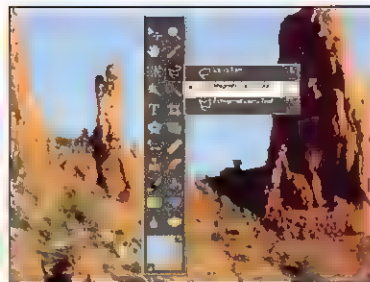
Where something is new or specific to a certain version, we'll point this out, and wherever possible we'll suggest alternatives you can use if you have another version – many features have counterparts which may look a little different or offer slightly different options but can often produce much the same result. That said, though, the latest versions



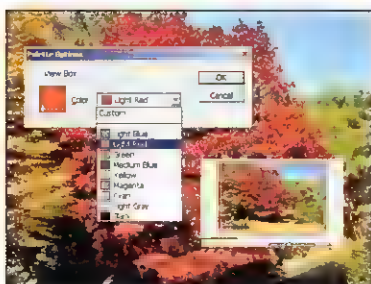
Page 12 Customise the Photoshop CS3 workspace by hiding or closing palettes



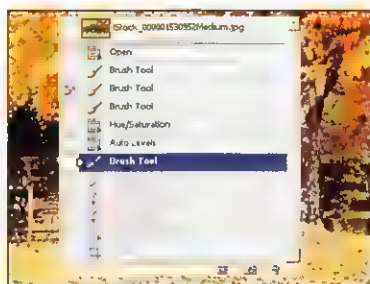
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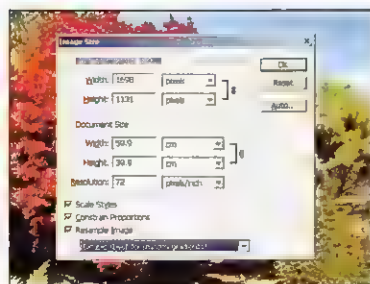
Page 16 Access the tools you need quickly using keyboard shortcuts



Page 17 Use the Navigator palette to zoom and scroll images the easy way



Page 18 Retrace your editing steps by reverting to previous History states



Page 19 Learn how image size, resolution and print size are related

of Photoshop and Elements do introduce some great new features, and we'll show you where these are, explain exactly what they do, and help you get to grips with them.

Similar but different

So what exactly is the difference between Photoshop and Elements? The former is aimed at professional photographers and designers, and it includes features that other users may never need, such as support for the CMYK colour mode used in commercial printing. Other features are nice to have, such as the ability to edit an image's colour channels independently. Elements is aimed at

the broad spectrum of digital photographers, and it has '90% of the tools that 90% of us need 90% of the time.' It's especially good for image-editing novices who might need a little guidance – and there's plenty of it to be found. Little 'light bulb' icons appear in pop-up dialogs and at the right of each Quick Fix tab, and you can go straight to the relevant advice by clicking on one. On top of this, the new Guided mode in Elements 6 will lead you by the hand through common tasks.

Want to find out more about the differences between Photoshop and Elements? Visit www.adobe.com/products/photoshop/family/

The Photoshop interface

CS3 includes some new options for managing palettes to help you customise the workspace



Want to try CS3?

You can download a trial version of Photoshop CS3 from www.adobe.com/downloads. In either the trial or the full version, you can quickly track down all the new or improved tools by clicking the Workspace button in the options bar and choosing 'What's new in CS3': new or enhanced menu commands will be highlighted in blue. (Select one of the other workspaces and menu options relevant to that task are highlighted.)

Photoshop is a huge program, with a dazzling range of tools, commands and options. Fortunately, it's all pretty logically organised, with commands grouped in menus and a toolbox containing all the tools (some sharing a compartment with related tools). Select a tool and you can adjust its settings in its options bar; select a command with ellipsis points (...) after its name, and a dialog window pops open in which you can configure it. A variety of movable palettes give you access to still more options and controls. In

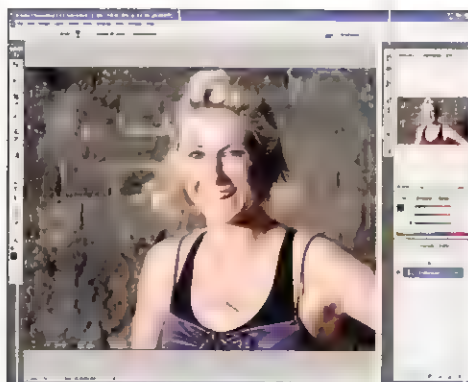
CS3 the toolbox and palettes take up less space than in previous versions, so you can see more of your images and concentrate on the job of editing them. As in previous versions, you can press [Tab] to hide the palettes (or [Shift]+[Tab] to hide all palettes except for the toolbox), but in CS3 if you want to access a particular palette after hiding it, you can move your cursor to the edge of the screen and the palettes will pop up. This means you can keep your screen uncluttered but quickly access tools and features when you need them.

TOOLBOX AND PALETTE BASICS

Click on any of the tools in the toolbar to activate it, and tool-specific options and settings become available in the tool options bar just below the main menus.

The CS3 toolbox takes up a space-saving single column by default – you can restore it to the traditional two-column version by clicking the tab displaying a double arrow.

In CS3, click and hold to select from four screen modes (see facing page), or press F to cycle through them. Earlier versions have three modes, with a button for each.



In CS3 the palettes are arranged in a dock, with a second, minimised dock next to the main one. Hover your cursor over any icon to see the name of the palette it represents; click to open it.

Click the double arrow button on either dock to collapse it to a row of icons or to expand it.

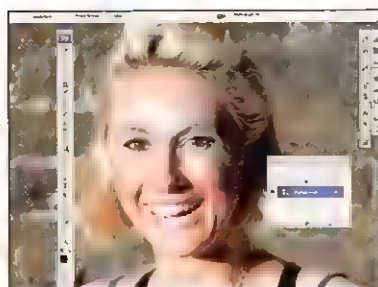
Every palette has its own palette menu for quick access to relevant commands and options – to open it, click on the mini-menu button at the top-right. It's a simpler arrow button in earlier versions.

Customise your workspace

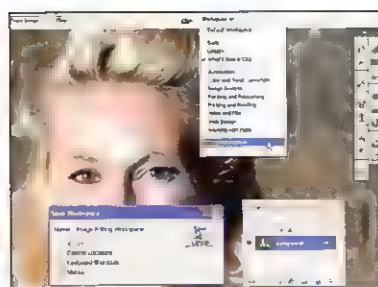
Personalise CS3's interface so that you can access the features you want more easily



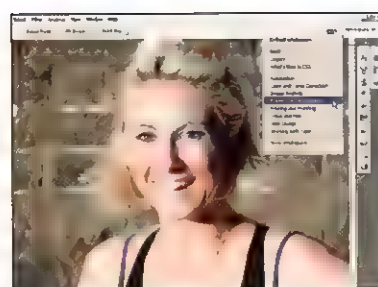
1 For a leaner, cleaner workspace with more room to view your image, click the main palette dock's 'Collapse to Icons' button (the double arrow icon at top right). Now bulky palettes such as the Layers palette or the Navigator take up virtually no space at all but can be opened and closed as you need them simply by clicking on the appropriate icon.



2 You can drag any palette or group of palettes away from the palette dock – just click and drag it by its name tab (or drag a group by its shared tab). To re-dock a floating palette, drag it back to its group; to re-dock a group of palettes, drag the group back to the collapsed dock. The toolbox can float free too, in either single-column or double-column form.



3 In addition to closing, minimising and rearranging palettes, you can define your own keyboard shortcuts and even hide menu items you don't need: go to **Window > Workspace > Keyboard Shortcuts & Menus**. Once you've got everything as you want it, select **Save Workspace** from the menu (or using the **Workspace** button in the options bar in CS3) and give your workspace a name.



4 You can create as many custom workspaces as you like, designed for specific tasks such as retouching or compositing, and activate them instantly from the menu. (In earlier versions, go to **Window > Workspace**.) Some custom workspaces are included, ready configured for specific tasks such as **Painting and Retouching**. Select one and give it a try!



The Window menu

There are other useful options in the **Window** menu. **Window > Arrange** gives you ways of viewing several images at one time and synchronising what you see of each as you work. **Window > Arrange > 'New Window for [image name]'** enables you to open a copy of the same image in a second window – great for comparing the original with your edited version as you make changes



Screen modes

In all versions of Photoshop you can choose between **Standard screen mode**, **Full Screen**, and **Full Screen With Menu Bar**. The latter two hide your desktop and other windows with a neutral grey background to help you focus on your image. CS3 offers an additional option: **Maximized Screen Mode**. If you select this, the image window will be expanded to fill the available space without encroaching on the palette dock. If you hide the palettes, the image window will automatically expand to fill the space; when you show the palettes again, the image window will shrink.

The Elements interfaces

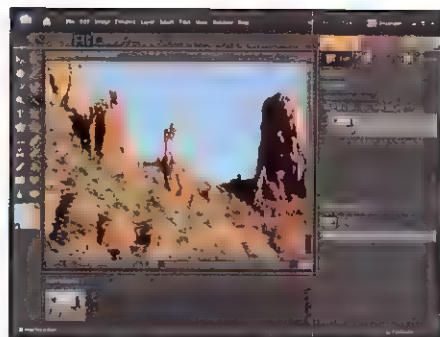
Elements' task-specific interfaces make it easy to organise, edit and share your images



Accessing palettes

The Effects and Layers palettes are displayed in the Palette Bin by default, but when you open additional palettes from the Window menu they'll float free on the workspace. To place a floating palette in the bin or to pull a palette out of the bin, click its tab and drag it. When a palette is floating free you also have the option to close it by clicking the button at the top-right.

Photoshop Elements doesn't have a default interface; instead you can launch the program in any of several modes, depending on whether you want to organise your images, edit them or use the Create options; Elements 6 also features a new Share interface which helps you email photos or burn DVDs, among other things. If you've upgraded to Elements 6, you'll find the interfaces less cluttered than previous versions, and buttons at the top-right of each screen make moving between the various modes easier. We'll start



Elements 6 features a new dark grey colour scheme, designed to help your photos stand out and make colour and tonal judgements easier

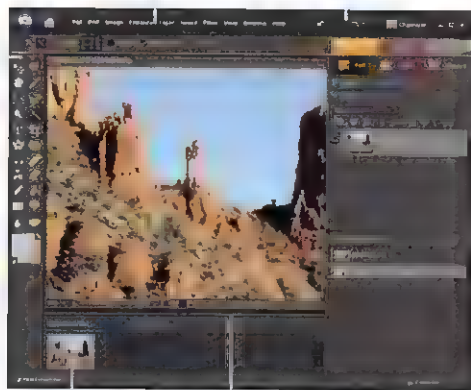
by looking at the Full Edit interface, which is where you're likely to do most of your editing.

FULL EDIT MODE IN ELEMENTS 6

The main menu bar houses tonal and colour adjustment options, filters and more. Below it is the tool options bar, which contains editable settings for the selected tool.

By default the toolbox is docked at the left of the workspace – you can pull it out to float free by clicking and dragging the top tab.

Any photos you have open are stored in the Project Bin. Double-click an image to open it in the main window. To remove an image from the window but keep it in the bin, click its minimise button.



Use these buttons to quickly undo and redo edits without having to use the Undo History palette or keyboard shortcuts.

The buttons at the top-right enable you to switch to the Organize, Create and Share interfaces, or to the Quick and Guided Edit modes (the last is new to Elements 6).

Click and drag this bar to resize the Project Bin, or click once on the bar to open or close the bin. You can open, close and resize the Palette Bin (see sidebar) using the corresponding vertical bar.

Quick Fix/Guided modes

Quick Fix makes photo-editing easy, and the new Guided mode makes it almost idiot-proof!

The Full Edit interface gives you access to Elements' full range of tools and commands, including layers and a variety of special effects. If you don't want to add layers to an image and just need to make a few basic corrections, you'll often find that Quick Fix mode is all you need. You can apply a range of automated corrections, and fine-tune them if necessary using sliders; you can also access all the adjustments under the Enhance menu and apply filters. If you're a complete novice at image editing and you want to keep

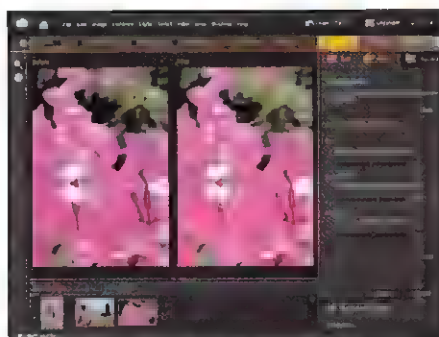


Photo editing doesn't get any easier than the Guided Edit mode in Elements 6 – just choose what you want to do and follow the steps

things really simple, you can make use of the new Guided Edit mode in Elements 6 (see sidebar).



Guided Edit mode

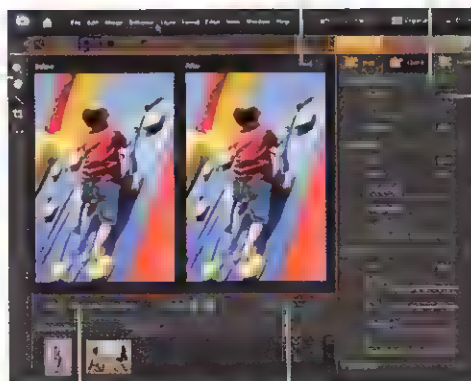
To use Guided Edit mode in Elements 6, click the Guided button at the top-right of the Editor interface and choose the correction you want to apply – you can, among other things, crop a photo, adjust contrast and exposure, boost colours and remove blemishes. You'll see a series of steps, prompting you to drag sliders or apply tools; click Done when you're happy with your image or want to apply another fix; click Cancel to start over.

QUICK FIX TOOLS AND FEATURES

If your editing isn't going to plan, you can click the Reset button to revert the image to its unedited state.

The toolbox is a pared-down version of the one in Full Edit mode, but it includes the new Quick Selection Tool (see page 34), plus the Crop and Red Eye Removal tools.

The View menu enables you to choose how an image is displayed. The Before & After options are the most useful – choose Vertical or Horizontal to suit the proportions of your image.



The sliders are grouped under Lighting, Color and Sharpen tabs, with Smart Fix and Red Eye Fix options under the General Fixes tab.

If you click the Auto tab, Elements analyses the image and applies an adjustment. You can correct the image yourself, or fine-tune an Auto correction, using the sliders.

To zoom in on your image, click and drag on the word Zoom. The slider that appears when you click the arrow is too sensitive, making it hard to zoom in or out smoothly.

Keyboard shortcuts

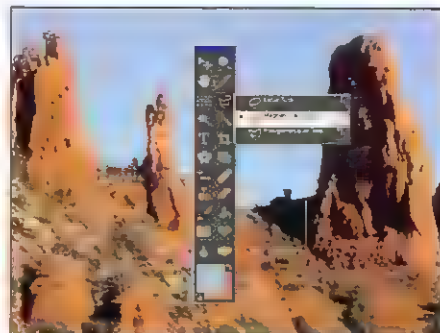
Speed up your image editing by using keyboard shortcuts and contextual menus



Contextual menus

Whichever tool you're using, you can also right-click/[Ctrl]-click to call up a contextual menu containing relevant commands and options. This is faster and easier than moving your cursor up to the main menu or the tool options bar – and sometimes, such as when you're drawing a path with the Pen Tool (page 112) for instance, you can't mouse up to the menu without drawing a path up to the top of the screen!

The more experienced you get with Photoshop or Elements, the less time you'll spend clicking on menus or moving your cursor all the way over to the toolbox to select a tool: you can select most tools and commands instantly using keyboard shortcuts. Apart from switching tools (see below), the most useful are: [Ctrl]/[Command]+S to save the file you're working on; [Ctrl]/[Command]+[Shift]+S to open the Save As dialog, so you can save it with a different name or in another format; [Ctrl]/[Command]+X, C and



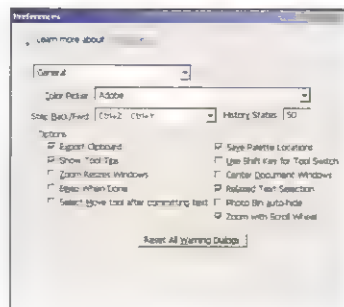
Click and hold down the mouse button or right-click/[Ctrl]-click on a tool to see the other tools in the toolbox compartment and their shortcut

V to cut, copy and paste respectively; and of course [Ctrl]/[Command]+Z to undo the last thing you did!

FASTER TOOL SELECTION

Save yourself time by selecting a tool with a single keystroke

To identify which key activates a particular tool, hover your cursor over the relevant toolbox icon – a floating tool tip will appear, displaying the tool's name and the relevant key. To see a list of all the tools in a compartment, click and hold or right-click/[Ctrl]-click on it. To cycle through the tools in a compartment, press the appropriate key repeatedly – the currently displayed tool will be selected first. Depending on which version you're using, you may need to add [Shift] to the shortcut key required to select a tool – but you can disable this option by going to the General section of Preferences and disabling 'Use Shift Key for Tool Switch'.



To switch tools more quickly, disable the Use Shift Key for Tool Switch option in the General Preferences

Zoom and scrolling shortcuts

You can move around your images without ever having to use the Zoom or Hand tools

Another set of shortcuts that will speed up your editing are those for zooming in and out of an image and scrolling around it. Instead of selecting the Zoom Tool, hold down [Ctrl]/[Command] and press the + or – key to zoom in or out. If you prefer to keep one hand on your mouse, hold down [Ctrl]/[Command] and the spacebar and click to zoom in; hold down [Alt]/[Option] and the spacebar and click to zoom out. (Note that the Zoom Resizes Windows option in the General Preferences, which changes

the size of the image window when you zoom in or out, applies only when you use the [Ctrl]/[Command] and + or – key shortcut, but not the spacebar one.) To scroll around an image, you don't need to select the Hand Tool; just hold down the spacebar to activate it temporarily.

Using these shortcuts means that you don't have to switch tools (let alone go all the way to the toolbar to do so) just to zoom in or out or scroll, and you'll soon find that you can hit the relevant keys without taking your eye off your image.



More view options

If you're using shortcuts, you won't need to use the View menu or Zoom Tool to zoom in and out, but both the View menu and the Zoom Tool's options bar include view options that are worth remembering. Fit On Screen zooms the image to fill the screen, Print Size displays the image at roughly the size it will print (though for technical reasons it's not precise), and Actual Pixels shows the image at 100% magnification.

THE NAVIGATOR PALETTE

Zoom and scroll your images using this handy set of controls

The Navigator palette (Window > Navigator) combines zooming and scrolling functions, and enables you to zoom and move around your images using only your mouse. There are three different zoom options. The slider is probably the most useful, because it enables you to control the zoom with greater precision than the shortcut options mentioned above. Alternatively, you can enter a value in the numeric field, and there are also buttons on either side of the slider for zooming in and out incrementally. Once you've zoomed an image, you can scroll around it quickly and precisely by dragging the view box around the preview image.



You can change the colour of the view box by selecting Palette Options from the Navigator palette menu

Undo and History

If you change your mind about an edit – or a whole series of edits – it's easy to discard them



Undoing a save

Every once in a while, no matter how careful you are, you'll accidentally overwrite a file by saving over the old file instead of giving it a new name. This is where the History comes into its own. By clicking on the original file state (saved by default at the top of the History), you can undo all your edits with a single click. Re-save this image, then reapply all your edits by clicking on the final history state, and save the edited file with a new name.

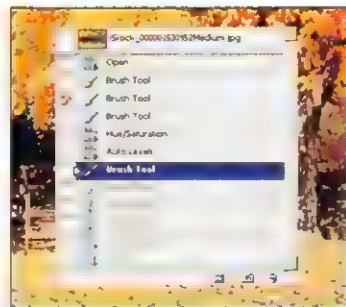
When you're editing your photos, your original file will be modified only when you save it, and, as long as you don't save an edited version over it (but sometimes even after that – see sidebar), your image can usually be restored to an earlier state, or its original state, at any time. In Photoshop, you can use the Undo/Redo command to cancel the last edit you made and to reapply it if you change your mind, and there are also Step Forward and Step Backward commands for navigating the History states (see below). In

Elements, there are separate Undo and Redo commands, and these can also be used repeatedly to step backwards and forwards through the Undo History palette. In addition, the File menu includes a Revert option, which undoes all the edits you've made since opening an image by reloading the original file. While these options provide you with a useful safety net, to be on the safe side you should always work on duplicates of your files, so that whatever happens you'll have access to the original image.

THE HISTORY/UNDO HISTORY PALETTE

Quickly switch between editing states with this powerful feature

Photoshop's History palette and Elements' Undo History palette work in the same way. As you make edits, each one is listed in the palette, and you can revert your image to any earlier state by clicking on that state. All the subsequent states will be greyed out. You can step forward by clicking on a later state, but note that if you revert to an earlier state and then apply a new edit, all the subsequent states will be deleted. When you reach the number of history states specified in the Preferences, the earliest states will start to disappear from the list, so increase the number if you think you'll need a lot of editing latitude for a particular project.



The History and Undo History palettes enable you to move quickly between editing states

Resolution and image size

The relationship between resolution and image size can be confusing – here's the lowdown

Digital images are made up of pixels ('picture elements'). Exactly how many there are in a given photo depends on the camera – a 3-megapixel camera produces images made up of 3 million pixels, arranged in a grid about 2,048 pixels wide by 1,536 high. It's these pixel dimensions that you see in the top part of the Image Size dialog, found under the Image menu in Photoshop and Elements. This is often referred to as 'input resolution', but it's more correctly 'image size' (or file size). Output resolution, by contrast,

dictates how the image's pixels are arranged when it is sent to a device such as a printer. Output resolution is usually measured in pixels-per-inch (ppi), and so dictates how many of the pixels in the image are contained in a single square inch of paper. Increase the output resolution (with Resample Image disabled) and you simply pack the same number of pixels together more tightly, so the print size is smaller, but the file size won't change. Enable resampling, though, and the program will discard pixels or add new ones – see below.



Screen resolution

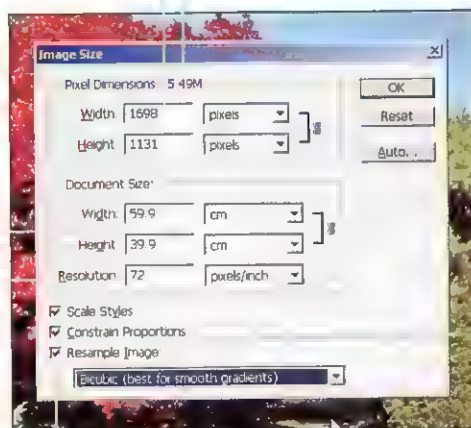
Screen resolution is typically only around 80ppi for 1024x768 screen resolution, and slightly more for higher screen resolution settings. This is why images appear much bigger on screen than they do in print – the same number of pixels is spread over a bigger area at 80 per inch than in print at 300 per inch. Changing the output resolution for your image has no effect on how big it appears on screen, only what size it will be in print.

THE IMAGE SIZE DIALOG

These dimensions show the width and height of your image in pixels. Any changes here will change the file size.

This is the image output (print) size, and is determined by the combination of pixel dimensions and resolution.

Change resolution without resampling and the image's pixels are simply spread over a greater or smaller area. Now enable resampling and reduce the resolution: you'll see the pixel dimensions fall as Photoshop throws away data – which means detail – it now doesn't need to print.



This is the file size of your image in megabytes. If you make changes, both the new and original size are shown.

Keep this enabled if you want to preserve an image's height-to-width ratio as you change its size. Otherwise you can stretch or squash it.

Enable Resample Image and Photoshop will discard data (downsample) if you reduce resolution or output size, or add data (upsample) if you increase either. CS3's menu includes tips on which option to use for best results.

Canvas size and resizing

What's the difference between changing the image size and changing the canvas size?



Add a quick frame

Planning to frame a photo print? Go to **Canvas Size**, set the **Canvas Extension Color** to white, tick the **Relative** box and add a 5mm border all around the image. Now set the colour to black and add 1mm, then set it to white again and add 10mm. This gives you a thin black keyline around the image, plus enough space for the frame. Not as stylish as some of Elements' ready-made frames, perhaps, but quick and easy!

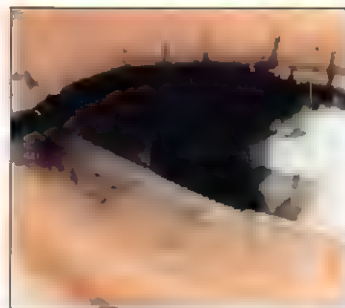
When you open a photo in Photoshop or Elements, the image is on a 'canvas' of the same dimensions as the photo. Resize the photo, and the canvas is resized with it. However, the **Canvas Size** dialog enables you to change the canvas size independently of the image size – ideal if you want to add space for a caption or frame. (Reducing the canvas is less useful – all this will do is cut off parts of the image.) Go to **Canvas Size** (under the **Image** menu in Photoshop or **Image > Resize** in Elements) and first type in a new

width and height. The **Anchor** box shows where the extra space will be added; by default it's added equally all around, but you can anchor the image to any of the corners or edges (just click on one of the squares to move the grey box representing the image), and the extra canvas will be added at the top, bottom or sides as shown. The **Canvas Extension Color** is the current background colour by default, but you can select a different colour from the menu or click on the little swatch box next to the menu to open the **Color Picker** (see page 70).

KNOW YOUR LIMITS

Want to turn a phone-camera shot into a poster? Think again

Resizing an image using **Image Size** (page 19) can be tricky: lower resolutions mean you can produce bigger prints, as the pixels in the image are spread over a bigger area, but too low a resolution will mean the image starts to look pixellated or 'blocky'. 150ppi is probably the minimum for 'photo-realistic' prints, and 300ppi the ideal. Even resampling might not help: Photoshop can only 'guess' at what new pixels to interpolate based on surrounding pixels; it can't create detail that the camera didn't capture in the first place, so upsampling too far will result in a much less sharp image, 'banding' in place of smooth gradations of tone or colour, and blocky artefacts.



Blowing up an image too far is like zooming right in on it – the pixels start to become discernable

Printing your images

For best results, don't just select Print – make sure you get your print settings spot-on

The settings in the Image Size dialog determine the size and resolution at which your image will print (though you can safely let your program reduce it at the print stage to fit it on smaller paper – see box below). For best results in pre-CS3 versions of Photoshop, use Print with Preview ([Ctrl]+[Alt]+P, or [Command]+[Option]+P on a Mac) – it gives you access to key settings now included in Elements' and CS3's Print dialog. Colour management is a huge topic, and if you're preparing images for commercial printing

there's a whole array of controls in Photoshop for colour profiles, soft proofing and much more. Otherwise simply go to Edit > Color Settings (in the Photoshop menu on a Mac), then Color Management Policies. Enable Preserve Embedded Profiles for RGB, CMYK and Gray, and tick all the boxes below. Under Working Spaces, set RGB to 'Adobe RGB (1998)'. (If an alert about colour profiles then pops up when you open any particular image, just hit OK.) In Elements, go to Color Settings and select Always Optimize for Printing.



Colour management

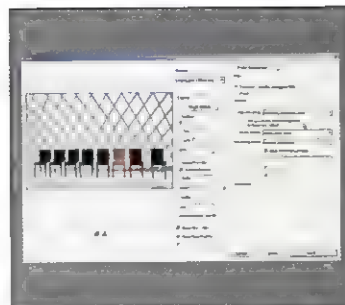
If colour is crucial to you, buy a monitor calibrator such as the Pantone Huey Pro (£100 at www.colourconfidence.com).

Photoshop and Elements will automatically detect the profile it creates and adjust colour display. Modern photo printers are very good at getting colour right, especially with quality photo papers, but if you're not happy, get a custom profile for your printer/paper setup from a firm such as www.pureprofiles.com

PRINT SETTINGS

Get these right to ensure crisp prints and accurate colours

Be sure to select the right paper size in Page Setup. If your image size is bigger than the paper, click Scale to Fit Media. Check to see if your printer comes with profiles for specific papers by selecting 'Let Photoshop Determine Colors' (or the Elements equivalent) in the Color Handling box and looking for them underneath in the Profile drop-down menu. Select the profile for the paper you're using if there is one, and ensure that colour management is turned off in your printer driver dialog. If you haven't got profiles, select the 'Let Printer Determine Colors' option, find a setting for ICM (or ColorSync for Mac) in the printer driver, and make sure it's enabled.



In pre-CS3 versions of Photoshop, always use Print with Preview so that you can adjust some key settings

CREATING AND MODIFYING SELECTIONS

Whether you're making localised colour edits or creating multi-layered composites, getting your selections right is vital, and we'll show you how to make yours pixel-perfect every time

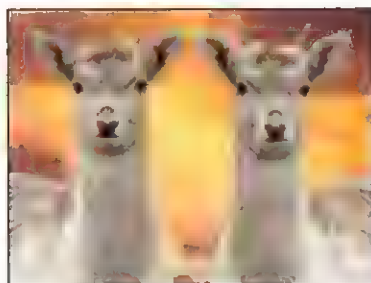
You'll often want to make 'global' changes to images, for example to correct general exposure problems or colour casts (as we'll see in later chapters). But sometimes you'll want to restrict your edits to specific parts of an image. In some cases, you might want to make very different changes to different parts of a photo, say to lighten the shadows in a scene and also darken the overexposed sky. If you're creating a composite image, you need to define and 'cut out' the objects or areas you want to use.

Whenever you want to define or delimit part of an image, you'll make and use selections. Photoshop

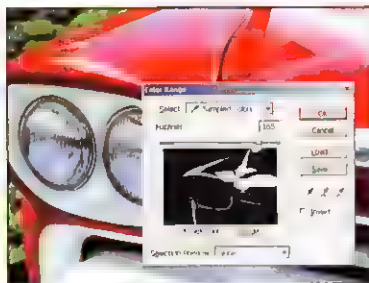
and Elements both offer a wide range of tools for this purpose.

Types of selection

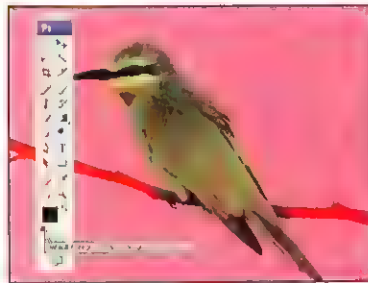
In broad terms, you can create two types of selections: by area or by colour. The first type can be as simple as a rectangle or ellipse drawn around an area in a photo, or it may be a tightly-defined outline around an object in the shot. You can create such an outline in a variety of ways – by drawing around an object using a 'magnetic' tool that detects edges defined by contrasts in tone and colour, or by painting over the object using brush-based tools, or even by letting the software try its



Page 27 Learn how to modify your selections to get them pixel-perfect



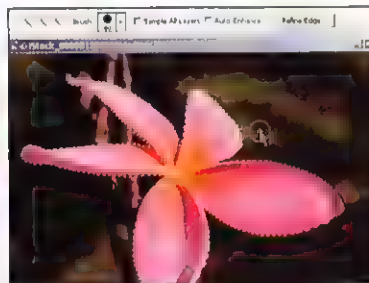
Page 29 Create precise colour-based selections with the Color Range dialog



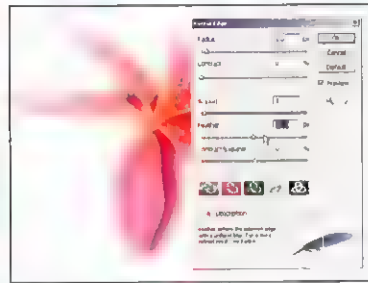
Page 30 Edit selections, or create new ones, using brushes in Quick Mask mode



Page 33 A few scribbles are all it takes to isolate a subject from its background



Page 34 The Quick Selection Tool is like three selection tools rolled into one



Page 35 Fine-tune any selection with the Refine Edge sliders and previews

hand at identifying objects almost completely automatically – all you need to do is apply a few scribbles to indicate broadly what is ‘foreground’ and what ‘background’.

There are also a number of ways to create colour-based selections. You can, among other options, select all the red objects in a photo, or a broad range of shades of red but within a limited area of the image.

Modifying selections

There are two useful things to bear in mind. First, you can mix-and-match tools to make a selection. You can make an initial selection with a lasso tool, then switch to the Magic

Wand, Photoshop’s Quick Mask mode or Elements’ Selection Brush – or any other selection tool – to add to it or fine-tune it. Second, you can also modify a selection using a range of menu options, rescale it, or nudge the selection outline just a touch to the left to get it spot-on.

One further selection option is not included in this chapter. Advanced users often create selections by drawing paths with the Pen Tool. We’ll look at this in Chapter 7 because it works in a fundamentally different way from the tools in this chapter, which all select pixels within your image, while paths are vector shapes, a whole other species.

Creating selections

The easiest way to get the hang of making selections is to start with the Marquee tools



Modifier keys

Holding down [Shift] will constrain the shape of a marquee and [Alt] will draw from a central point only when 'New selection' mode is enabled. Once you've drawn a marquee, those keys will change the tool's selection mode (see the box below). If you want to create additional constrained shapes, you'll need to select Fixed Aspect Ratio from the Style menu in Photoshop or Fixed Ratio from the Mode menu in Elements.



Moving selections

If your marquee selection is the right size but isn't quite lined up correctly, you can click and drag inside the marquee to move it around, or nudge it up, down, left or right using the cursor keys. Make sure you have one of the Marquee tools selected when you click and drag – if you use the Move Tool, you'll move the selected pixels rather than the marquee. If you're using Photoshop you can also alter the size and shape of a selection – see page 26.

The Rectangular and Elliptical Marquee tools (the keyboard shortcut for selecting either is M) are the most basic selection tools in Photoshop and Elements: you simply click and drag to draw a rectangular or elliptical selection. To constrain the marquee to a perfect square or a circle respectively, hold down [Shift] as you drag. Hold down [Alt] to draw the marquee out from a central point instead of from corner to corner (see sidebar). If you hold down both keys, you can draw a constrained shape from a central

point – useful, for example, if you want to select a subject's eye.

When you're using any selection tool, four buttons in the options bar enable you to alter how it behaves, so that drawing a new shape adds to an existing selection, for example, instead of making a new selection – see below for more. Once you've made a selection with any tool, it's demarcated by an animated dotted line, referred to as 'marching ants'. If you find this distracting, you can hide it but keep the selection active by pressing [Ctrl]/[Command]+H.

ADDING AND SUBTRACTING

WHEN ANY selection tool is active, you'll find four buttons towards the left of the tool options bar. When 'New selection' is enabled, a brand new marquee is created each time you use the tool, and any existing selection is deselected. 'Add to selection' means you can draw several separate marquees to build up a larger or more complex selection. Use the 'Subtract' option to remove areas from an existing selection.

THE 'INTERSECT WITH SELECTION' option enables you to select areas where two selections overlap – it's a useful alternative to subtracting from an initial selection when the area that you want to keep is small and subtracting would involve a significant amount of work.

YOU CAN SWITCH quickly between Add, Subtract and Intersect modes by holding down [Shift], [Alt]/[Option], or [Shift]+[Alt]/[Option] respectively. This enables you to leave 'New selection' as the standard and yet modify a selection without having to return to the options bar.

The Lasso tools

The Lasso and Polygonal Lasso are pretty basic, but the Magnetic version is more interesting

The standard Lasso Tool (L) is essentially a freehand drawing tool – you click and drag to draw a marquee, and when you release the mouse button the selection is closed. It isn't a good choice for cutting out objects, unless you want to make a very rough selection and are happy to include a fair few background pixels. The two variants of this tool, however, are much more effective. The Polygonal Lasso Tool enables you to quickly and accurately select straight-edged objects by clicking to place corner points that are joined

by straight lines. To complete a selection, hover your cursor close to the first point that you placed, and a small circle will appear next to the cursor, indicating that the next click will close the selection. You can also close the selection at any time by double-clicking. When you're using either the Lasso or Polygonal Lasso, you can switch to the other tool as you're drawing by holding down [Alt] and clicking. The third and most powerful of the Lasso tools is the Magnetic Lasso – see below for a guide to when and how to use it.



Deleting points

If you place an anchor point incorrectly with the Polygonal or Magnetic Lasso tools, or you want to delete a point that has been placed automatically by the latter tool, hit [Backspace] to remove the point, and then resume drawing from the previous point.

MAGNETIC LASSO TOOL

This tool can be very effective when you use the right settings

The Magnetic Lasso uses changes in contrast to detect the edges of objects. You trace the edges of your subject, and the tool places anchor points automatically. If it goes astray, you can give it a helping hand by clicking to place points manually. The Width setting dictates the distance from the cursor within which edges will be selected, so keep this low for greater accuracy. Edge Contrast controls the sensitivity of the tool: higher settings are fine if there's good contrast between edges, but you'll need lower settings for less well defined outlines. Frequency specifies how often anchor points are placed, so keep this high for intricate edges.



The Magnetic Lasso does a decent job of selecting objects that contrast strongly with their background

Key selection commands

It pays to learn the keyboard shortcuts for the most useful commands in the Select menu



Inverting selections

Select > Inverse ([Ctrl]/[Command]+[Shift]+I) deselects the currently selected area and selects the rest of the image or layer instead. If, for example, you want to select a subject against a plain background, you'll often find it's easier to select the background, then invert the selection to select the subject. Don't confuse Select > Inverse with Image > Adjustments > Invert ([Ctrl]/[Command]+I), which inverts an image's colours.

There are a few commands that you'll find yourself using time and again when you're creating selections, so it's worth learning the shortcuts. The most useful is Select > Deselect ([Ctrl]/[Command]+D), which deactivates a selection, enabling you to start again; clicking outside the selection does the same thing when 'New selection' is enabled. If you want to reactivate your last selection, choose Reselect ([Ctrl]/[Command]+[Shift]+D). Select All ([Ctrl]/[Command]+A) selects all the pixels on the active

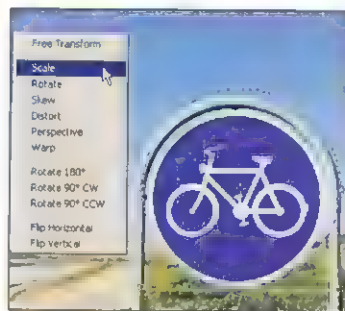
layer, while Select > Inverse ([Ctrl]/[Command]+[Shift]+I) is another very handy option – see the sidebar.

If you're using Elements, you can move a selection marquee (see page 24), but if you want to change the size or shape of a marquee you'll need to redraw the selection. If you have Photoshop, however, you can access a range of options for altering your marquee by going to Select > Transform Selection, or by right-clicking/[Ctrl]-clicking anywhere on the canvas and choosing the same option from the contextual menu.

TRANSFORMING SELECTIONS

Make your selections perfect by rescaling and reshaping them

When you choose Transform Selection, a bounding box will appear around your marquee. Drag the edge handles to rescale a selection (press [Shift] to constrain the proportions), or click and drag outside the box to rotate it. Press [Ctrl]/[Command] while dragging a handle to perform a free distortion, press [Ctrl]/[Command]+[Shift] while dragging a side handle to skew, and press [Alt]/[Option]+[Shift] while dragging a corner handle to distort perspective. Hit [Enter] to apply the transformation. If you right-click again while the bounding box is active, you'll see a menu containing all the above options, plus Flip and Warp (CS2/3 only).

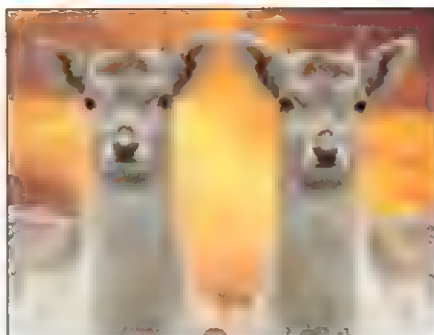


Transform Selection works in the same way as Edit > Transform, but alters the marquee rather than layer content

Modifying selections

There are plenty of options for fine-tuning your initial selections to make them pixel-perfect

You'll find several options for modifying a selection under the Select menu, and in the menu that appears when you right-click/[Ctrl]-click on the canvas with a selection active. Most selections will require feathering, which softens the transition between selected and non-selected pixels. This makes for a smoother blend for any adjustments, or between a subject you've cut out and its new background. You can enter a feather value in the options bar for most selection tools, or by going to Select > Feather and



The deer on the left is feathered, the deer on the right isn't; the difference is subtle, but such details can make or break a composite image

entering a value in the dialog. The right value depends on the image, but a few pixels is usually sufficient.



Removing fringes

If you're using Elements, you can reduce the appearance of colour fringes around composited layers by going to Enhance > Adjust Color > Defringe Layer. This softens the colour transition between the edge pixels on the upper layer and the surrounding pixels on the layer below. It can be a useful quick fix for certain images, but a combination of contracting and feathering will usually produce better results.



Grow and Similar

The Grow and Similar options expand a selection by adding further pixels to it based on the Magic Wand Tool's Tolerance setting (see next page). Create a selection with any tool, then with the selection active select the Magic Wand Tool and adjust the Tolerance setting. Grow adds only pixels within the colour range that are adjacent to those already selected, while Similar includes pixels throughout the image. You can select either command repeatedly, so it's a good idea to keep the Tolerance setting low and expand the selection incrementally.

MORE SELECT MENU OPTIONS

THE EXPAND AND CONTRACT options in the Select > Modify sub-menu enable you to shrink or enlarge a selection by a specified number of pixels. When you're cutting out subjects for use in a composite image, it's often useful to contract the selection by a pixel or two to remove the colour fringes or 'halos' that often cling to contrasting edges.

THE SMOOTH command is similar to the anti-aliasing option that's available for the Lasso, Elliptical Marquee and Magic Wand tools, and smooths out the 'stepped' lines of curved and diagonal selection edges.

THE BORDER option effectively creates a second selection around an existing one, and is useful for blurring, lightening or darkening the edges of a selection with affecting the rest of the subject.

IF YOU HAVE CS3 or Elements 6, you'll find that several of the Select menu options also appear in the Refine Edge dialog (see page 31).

The Magic Wand Tool

The Magic Wand is ideal for making simple colour-based selections – here's how to use it



Saving selections

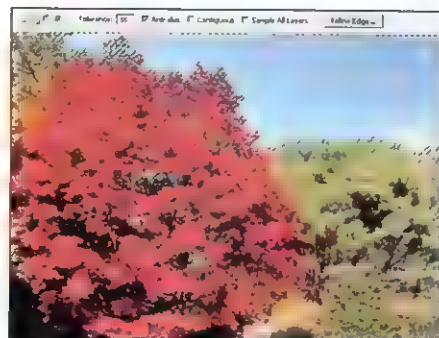
If you've done a lot of work to create a selection and you think you might use it again, it's a good idea to save it. You can save any active selection in both Photoshop and Elements by going to **Select > Save Selection** and giving it a name. If you want to reload the selection, simply choose **Select > Load Selection** and choose the selection from the menu in the Source section of the dialog.



Selections as channels

In Photoshop, selections are saved as alpha channels in the Channels palette (see Chapter 5 for more on channels), and you can reload a selection by [Ctrl]/[Command]-clicking the relevant channel. If a selection you've made has been floated to a new layer, you can reload the selection by [Ctrl]/[Command]-clicking that layer's thumbnail in the Layers palette. If a selection exists as a layer mask – on a Curves adjustment layer, for example – you can reload it by [Ctrl]/[Command]-clicking the mask icon next to the layer thumbnail.

Rather than selecting a shape or object in an image, you'll often want to select a specific range of colours – an example is when you want to select the sky in a landscape shot, so that you can delete it and replace it with a more atmospheric sky from another image. One of the easiest ways of doing this is with the Magic Wand Tool (W), which works by selecting pixels of a similar colour. You can configure the tool to make it select a narrower or wider range of colours by adjusting the Tolerance setting in the options bar,



By unticking **Contiguous** we were able to select all of the sky in this image – including the areas showing through the trees – in a couple of clicks

and you can fine-tune a selection by adding pixels to the selection or subtracting pixels from it.

MAGIC WAND SETTINGS

TOLERANCE controls the range of colours that will be selected by the tool – higher values mean a wider range of colours will be selected.

ANTI-ALIASING smooths the jagged, 'stepped' edges that can appear when you select objects with elliptical or diagonal edges. This helps the edited pixels blend more smoothly into the rest of the image.

IF YOU ENABLE CONTIGUOUS, only pixels adjacent to the ones you click on will be selected. If you untick this option, similar-coloured pixels throughout the entire image will be selected.

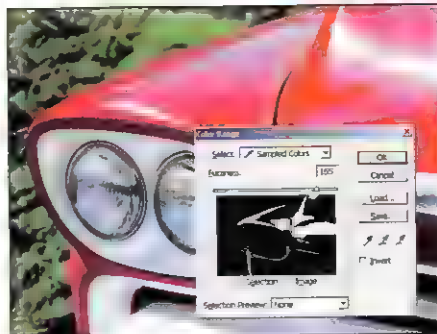
ENABLING USE ALL LAYERS means that pixels from all visible layers in a multi-layered image will be selected.

IT'S OFTEN BEST to start with a low Tolerance setting, then hold down [Shift] or choose 'Add to Selection' and click repeatedly until you've selected all the pixels you want.

Color Range

This powerful Photoshop tool gives you more control over your colour-based selections

The Magic Wand Tool enables you to quickly select pixels of a similar colour. However, the tool can sometimes fail to select every pixel you want – some pixels may fall just outside the specified range, and you can easily miss a small cluster of ‘marching ants’ tucked away in the corner of the image that indicates unselected pixels. Another tool that makes selections based on colour is Photoshop’s Color Range command. The advantage this tool has over the Magic Wand is that it gives you more visual feedback



The Color Range dialog is ideal for selecting the wide variety of red tones in this image, some of which are highlights and some shadows

regarding your selection, and it’s also easier to fine-tune the selection to capture all the pixels you want.



A range within a range

In addition to selecting all the colours from the areas in which you click, you can restrict your selection to a particular range of colours by choosing, for example, Reds from the Color Range dialog’s Select menu. You can also choose to select colours from only the shadows, midtones or highlights – this is useful if you want to adjust the contrast of a specific tonal range without affecting the rest of the image.

THE COLOR RANGE DIALOG

Fuzziness is similar to the Magic Wand’s Tolerance option, making the tool more or less sensitive, but you can adjust the slider on-the-fly.

Click here for a grayscale preview of the image – white indicates selected colours, black unselected colours.

From this menu, you can choose one of four options for previewing your selection in the main image window. If you choose Black Matte, for instance, unselected areas will appear black and selected areas will appear in colour.



When your desired colour range shows up as a strong white in the preview window, click OK. A ‘marching ants’ border will indicate the selected pixels in the image.

Use the left eyedropper to make your initial selection, then the Add and Subtract eyedroppers, in conjunction with the Fuzziness slider, to add colours to the selection or subtract colours from it.

If you want to invert your selection, so that the selected pixels become deselected and vice-versa, tick this box.

Quick Mask mode

Photoshop's Quick Mask mode enables you to create or fine-tune selections using brushes



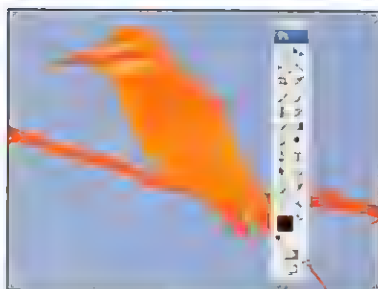
Quick Mask Options

If you leave Color Indicates set to Masked Areas in the Quick Mask Options dialog, your black and white brushes will work in the opposite way: a black brush will mask areas and remove them from the selection, and a white brush will unmask areas and add them to the selection.

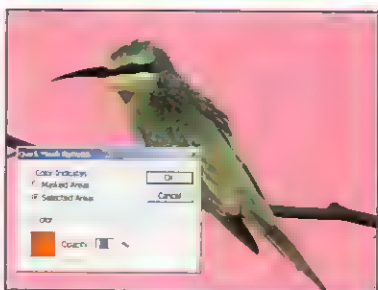


Using the selection

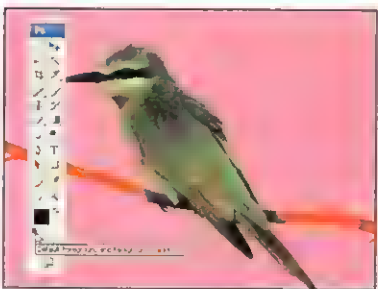
When you're happy with the selection, you can invert it to select the bird, go to **Edit > Copy** to copy it, and paste it into a new image. You could alternatively delete the sky and branch, then add a new background to the image as a new layer, but note that to do this you need to double-click the Background layer first to unlock it. Now when you delete unwanted areas, your subject will sit on a transparent background; if you don't unlock the layer, when you hit [Delete] the subject will sit against the background colour (white by default). There's more on layers in the next chapter.



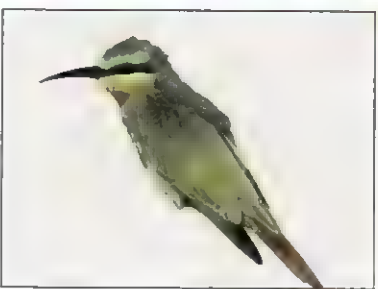
Rather than trying to select this bird, it's easier to select the sky with the Magic Wand Tool, then switch to Quick Mask mode to add the branch to the selection and delete the unwanted areas. With our sky selection active, we press Q to enter Quick Mask mode (you can also click the button near the foot of the toolbox). By default the unselected or masked areas show up in red.



In this case we'd rather view the selected areas in red, so we double-click the Quick Mask mode button to open the Quick Mask Options dialog, and change Color Indicates from Masked Areas to Selected Areas. (You can also change the colour of the mask – useful if your image contains a lot of red areas – and its opacity.) Click OK to apply the changes.



Select the Brush Tool (B), and hit D (or click the small icon next to the colour swatches) to set the foreground and background colours to the default black and white. Paint over the areas you want to add to the selection with a black brush (tap the left and right square bracket keys to quickly change the brush size); since Color Indicates is set to Selected Areas, these areas turn red.

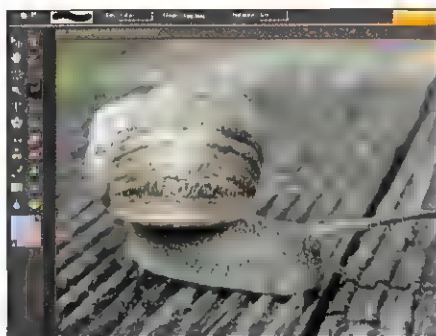


If you select any of the bird by mistake, you can hit X to change the foreground colour to white, and brush over those areas to deselect them. To see how the selection is shaping up, you can hit Q to toggle between Quick Mask mode and the regular 'marching ants' selection. When you're happy with the selection, exit Quick Mask mode and delete or copy your selected areas (see sidebar).

The Selection Brush Tool

If you're using Elements, you can use this tool to create and modify selections with brushes

Elements' Selection Brush Tool also enables you to modify selections or create new ones using brushes. Set Mode to Selection, click 'Add to selection', and you can 'paint' with marching ants to define a selection; if you choose 'Subtract from selection', selected pixels you brush over will be removed from the selection. Set Mode to Mask, and the tool behaves like Photoshop's Quick Mask mode: if 'Subtract from selection' is enabled, you can paint over pixels within a selection to turn them red and remove them from the



The Selection Brush is handy for objects that have fairly simple edges but would be difficult to select with a colour-sensitive tool

selection; enable 'Add to selection' to paint over unselected, masked pixels to add them to the selection.



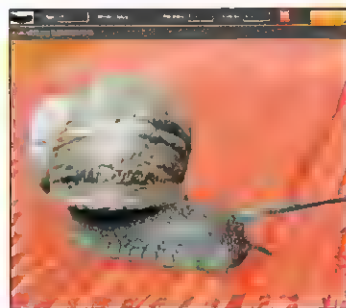
Magic Selection Brush

Elements 5's Magic Selection Brush (it's been replaced by the Quick Selection Tool in Elements 6) enables you to create selections by scribbling on the areas you want to select: when you release the mouse button, Elements creates a selection based on the colour values of the areas you've drawn over. You can fine-tune the selection by switching between Background and Foreground modes and adding further scribbles.

USING THE SELECTION BRUSH

Select the areas you want to edit by simply brushing over them

How you use the Selection Brush will depend on what you're trying to select, but it's generally best to start off in Selection mode and fill in the bulk of the object you want to select with a suitably sized brush. Reduce the brush size (tap the left square bracket key to do this quickly while you work) to work around the edges, then switch to Mask mode to preview the selection. Switch between Mask and Selection mode, and between Add and Subtract mode, to fine-tune the selection until you're happy. You can then edit the object or copy it to a new file, or invert the selection ([Ctrl]/[Command]+[Shift]+I) to edit or delete the background.



Switch to Mask mode to preview your selection, and use any combination of modes to fine-tune the marquee

The Extract filter

Photoshop's Extract filter can do a great job of selecting objects with finely detailed edges



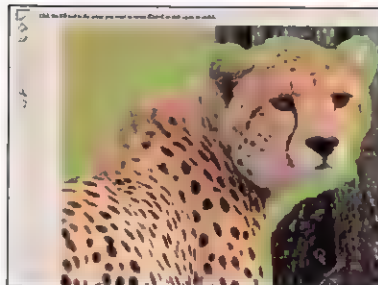
Extract tool options

If you enable Smart Highlighting in the Tool Options section of the dialog, the size of the Edge Highlighter brush will be adjusted automatically to apply only enough highlight colour to cover the edge of your subject. You can also change the colour of both the edge highlight and the fill, which you may find helpful if the image you're working on contains colours that are similar to the default tool colours.

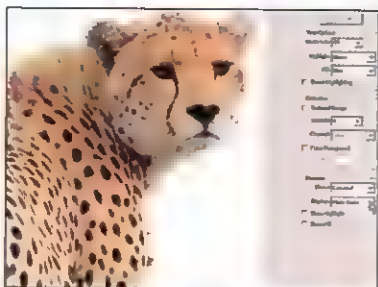


Brush shortcuts

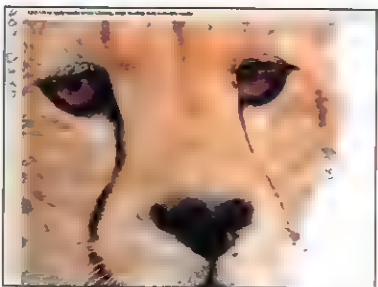
When you're using the Edge Highlighter, Cleanup or Edge Touchup tools, you can use the left and right square bracket keys respectively to decrease or increase the size of your brush as you work. When you're using the Cleanup and Touchup tools you can also use the numeric keys to change the opacity of the tool – 1 will set the opacity to 10%, 9 to 90% and 0 to 100%. It's a good idea to start with a low opacity and work over areas several times to create subtle edge transitions, especially in areas where Photoshop can't perform a perfect extraction.



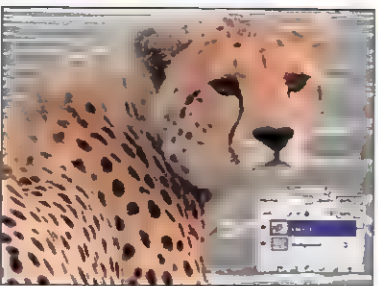
1 When you want to select a subject that has hair or fur, or any object with intricate edges, Photoshop's Extract filter will usually be your best bet, as long as the subject's edges sit against a contrasting background. Go to **Filter > Extract**. By default the Edge Highlighter Tool will be selected; use this to trace the outline of your subject, as we've done here.



2 Select the Fill Tool (G), and click once within the outline – your subject will turn blue. Click **Preview**, and Photoshop will perform the extraction. By default your extracted subject will be previewed against a transparent background, but you can specify a colour to make it easier to see missing bits of subject or leftover bits of background; here we chose White Matte.



Zoom in and scroll the image to take a close look at the edges (using keyboard shortcuts will make this easier). Select the Cleanup Tool (C), and brush over leftover bits of the background to erase them; hold down [Alt]/[Option] and brush over missing areas of the subject to restore them. Use the Edge Touchup Tool (T) to smooth out and expand or contract the outline.

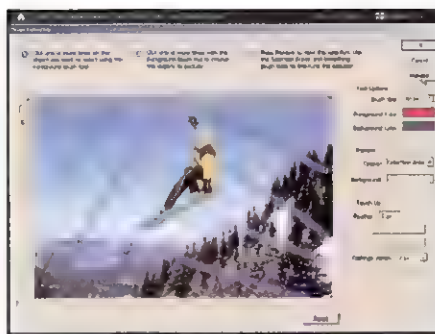


When you're happy with the extraction, click **OK**; your subject will now sit against a transparent background, enabling you to select, copy and paste it, or add a new background image. Here we've added a snowy backdrop as a new layer, moved it below the subject layer and made some subtle colour adjustments to help the leopard blend in with his new surroundings.

Magic Extractor

The Magic Extractor is Elements' equivalent of the Extract filter, and it works in a similar way

Elements users can remove a subject from its background using the Magic Extractor—go to **Image > Magic Extractor** to launch the interface. Instead of painting over the edges of your subject and then filling in the selection as you would with Photoshop's Extract filter, you simply scribble over your subject with the Foreground Brush Tool, and then scribble over the unwanted background with the Background Brush Tool. If there's good contrast between subject and background, a couple of scribbles



The more you scribble, the more information you give Elements to work with and the better the initial extraction is likely to be

will do the trick. You can then click the Preview button, and Elements will perform the extraction.



More options

The Tool Options enable you to alter your brush size (though tapping the square bracket keys is a faster way to do this) and change the colour of the Foreground and Background brushes.

You can select different Background options in the Preview section to help analyse your selection. In the Touch Up section, use Fill Holes to replace any missing pixels within the selection, and Defringe to remove any fringes of background pixels.

REFINING THE MAGIC EXTRACTION

The dialog includes several tools for fine-tuning your selection

When you hit the Preview button, you'll see how your image will look with the calculated extraction applied. If you want to add pixels that haven't been included, simply mark them with the Foreground Brush Tool and hit the Preview button again; the same goes for removing unwanted areas with the Background Brush Tool. Alternatively, you can brush areas back in or out using the Add To Selection and Remove From Selection tools. The Point Eraser Tool removes any unwanted marks made with the Foreground or Background Brush Tools, while the Smoothing Brush can be used to iron out any ragged edges created by the extraction.



This is Elements' first attempt at extracting our snowboarder from his background – pretty impressive!

The Quick Selection Tool

This CS3 and Elements 6 tool makes isolating an object from its background easier than ever



Brush options

Click the Brush preview in the options bar to open the Brush picker. You can adjust the brush size here, and also the hardness and other properties, including brush angle. Apart from the size, most of these settings can usually be left as they are. Unless you want expert-level control, it's easier to use Refine Edges to fine-tune your selection.

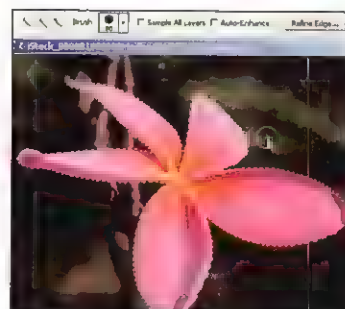
Whether you want to apply localised colour adjustments or create composite images, making clean selections is a key aspect of image editing, which is why Photoshop and Elements include so many different selection tools. The Quick Selection Tool, which is new to Photoshop CS3 and Elements 6, is a 'best-of' tool that works like a combination of the Magic Wand and Magnetic Lasso tools, but with the brush features of Photoshop's Quick Mask mode or Elements' Selection Brush Tool. Used on the right image,

you'll find, it can help you create clean selections with a minimum of time and effort. To use the Quick Selection Tool you simply brush over the object or area you want to select – the tool will recognise what you're trying to select, and will adjust the marquee accordingly. While it doesn't have a Tolerance setting, it does include an Auto-Enhance option, which adds an extra level of intelligence to the edge selection. As with the Magic Wand Tool, there's a Sample All Layers option for multi-layered images.

USING THE QUICK SELECTION TOOL

Use brushes to quickly build up a precise colour-based selection

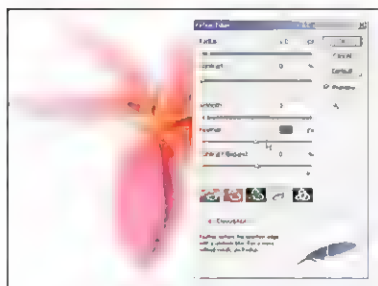
The easiest way to create a selection is to start by painting some distance inside the colour or brightness area that you want to select – the selection border will snap to the nearest recognised edges automatically. Use the tool in 'Add to selection' mode to build up your selection. If you make a mistake or the tool automatically selects an area you don't want, switch to 'Subtract from selection', and click in or brush over the area to deselect it. Once you have a rough selection marquee, you can reduce the brush size, zoom in and use the tool to select or deselect edge detail – you'll find that you can create a near-perfect selection in no time at all.



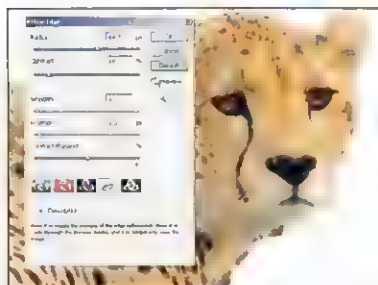
Hold down the [Shift] key to quickly switch to 'Add to selection' mode and [Alt]/[Option] for 'Subtract' mode

The Refine Edge dialog

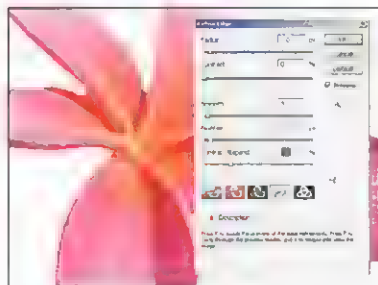
This dialog is also new in CS3 and Elements 6, and can be used to fine-tune any selection



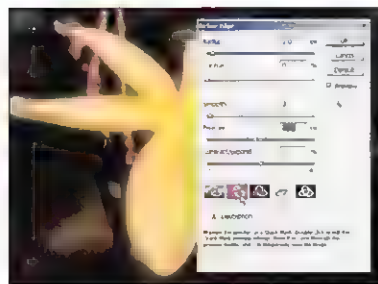
The Refine Edge dialog combines several options for modifying your selections in one interface, along with a choice of preview options, enabling you to perform all your fine-tuning in one go. Here we've applied a heavy feather to a selection to demonstrate its effect, and chosen CS3's 'On White' preview option to make the feathering easy to see.



The Radius slider can be used to soften the transition between selected and unselected areas, and is useful if the subject has fine edge detail. If the Radius setting makes the edges of your subject look too fuzzy, you can restore some definition with the Contrast slider. This 'before and after' shot shows the effect of different settings on the right side of the leopard's face.



It's often useful to contract a selection slightly – it's better to lose a little of the edges of a subject than make a selection that's too big and leaves a halo, particularly if you want to place the subject against a high-contrast background. The Smooth slider has an effect similar to applying anti-aliasing, smoothing out 'stepped' pixels in diagonal or curved edges



As with Quick Mask mode and the Selection Brush Tool, you can change the mask colour if your image contains tones that are similar to the default red. To do so, double-click the Quick Mask icon in CS3, or the Custom Overlay Color icon in Elements 6. Here we've changed the colour to yellow, so we can get a better idea of how our Feather setting affects the selection.



Dialog options

The Refine Edge dialog in Elements 6 is slightly different from the one in Photoshop CS3: there are just two preview modes instead of five, and there's no Radius or Contrast slider.

The other Refine Edge options work in the same way, and you can achieve results every bit as good as those you'll get with CS3's version of the dialog.



No shortcuts!

The Quick Selection Tool and the Refine Edge dialog are powerful additions to Photoshop and Elements, but they're no substitute for making a good initial selection, so you'll still need to spend some time on that part of the process, especially if you're dealing with finely detailed edges.

The most successful approach is to start big and work down to small details, as we suggest on the previous page. The better your initial selection, the less you'll need to make adjustments with the Refine Edge sliders.

LAYERS AND ADJUSTMENT LAYERS

When you've made the perfect selection, what are you going to do with it? If you're creating composites or just want to apply adjustments 'non-destructively', you'll be using layers

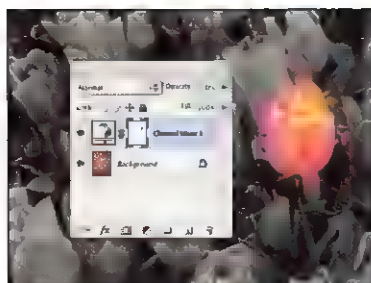
Once you grasp the concept of layers, it seems so simple and obvious that it's surprising to learn they haven't always been there in Photoshop. When you cut an object out of one image and paste it into another image to create the simplest composite, the pasted object appears on a new layer, as if on a transparent overlay. Add new objects one by one and each appears on its own layer, which is what makes it so easy to move objects around in a composite, slide one 'behind' another, and so on. It can all become quite complex, but that's why both Photoshop and Elements offer a dedicated menu and palette for managing layers,

their stacking order, and other useful options we'll look at in this chapter.

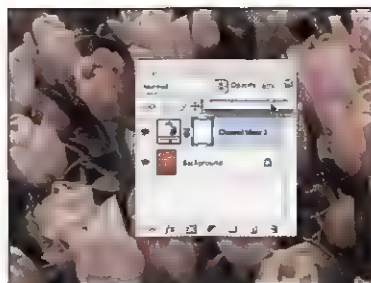
In fact, pasting objects isn't the only way to generate layers. Once you've made a selection, you can 'float' its content to a new layer by pressing [Ctrl]/[Command]+J, and you can then reposition it, resize or distort it using the Transform menu options, or apply adjustments and effects to it independently.

Adjustment layers

What's more, adjustments or effects themselves can be applied in the form of separate layers. The greatest advantage of this is that adjustments and edits become 'non-destructive' –



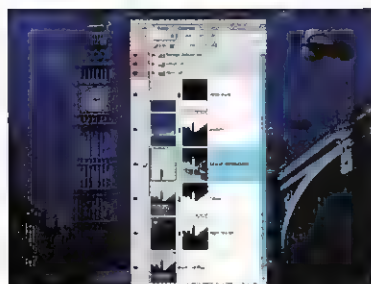
Page 39 Apply changes in the form of adjustment layers and localise the effect



Page 40 Fine-tune your adjustments by altering opacity and blending mode



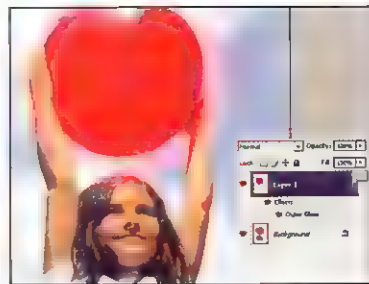
Page 41 'Clip' layers to create striking effects in Photoshop or Elements



Page 42 Manage complex multi-layered compositions more efficiently



Page 44 Two new features in CS3 will help you create more seamless blends



Page 45 Layer Styles offer an easy way to apply a number of 'special effects'

they don't actually alter the pixels that make up the image. This means you can come back to adjustments at any time to fine-tune them, or even remove them completely if you choose. Your original image data is never degraded or discarded, no matter how severe your changes.

Convert an image to monochrome using the Desaturate command, for example, and you can't recover the colour information that has been thrown away (unless you step back in the History palette, but this entails discarding all other changes you've since made as well). Convert it to mono by adding a Hue/Saturation adjustment layer, though, and the

colour is still there; you can see it again at any time simply by hiding the adjustment layer.

Adjusting adjustments

Adjustment layers offer many other benefits. You can alter their effects using opacity or blending modes, or restrict where they apply using the mask that is automatically generated when you add the layer. (If there's a selection active when you do so, the mask is based on that selection, but can always be edited later.) Bear in mind that many of the options you'll see in later chapters can be applied on (or limited to) separate layers, making editing far more flexible.

Understanding layers

Layers are the key to non-destructive image-editing, enabling you to add effects as ‘overlays’



The Background layer

When you open a photo, it consists of one layer, called the Background layer. While you can edit this layer, if you plan to make lots of changes it's a good idea to duplicate the layer and work on the duplicate – this way you won't destroy any of the original image information. You'll also find that you can't apply certain edits to the Background layer – you'll need to double-click it first to unlock it and turn it into a regular image layer.

The best way to understand how layers work in Photoshop and Elements is to imagine several sheets of clear acetate stacked on top of a painting, each containing more painted detail; any unpainted areas on one sheet will allow you to see what's on the sheets below. Layers can be used for all kinds of image editing work and, along with selections, they make it possible to create composite images. You can add as many new layers as you want to an image or to a new blank file, and you can delete them or change

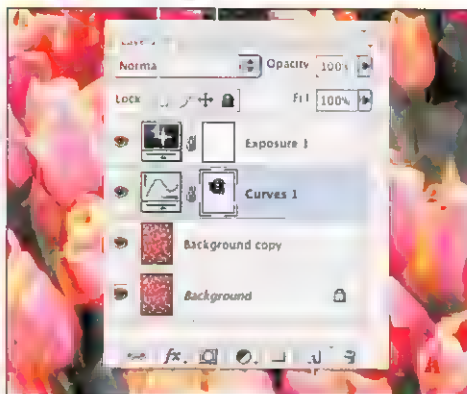
their stacking order at any time, giving you unrivalled freedom to experiment with compositions and effects. To add a new layer, click the ‘New layer’ button at the foot of the Layers palette (or at the top of the palette in Elements); you can also create layers and access layer-related commands via the palette menu or the Layer menu in the main menu bar. In addition to image layers, you can also create adjustment and fill layers, which don't contain pixels but change the appearance of layers below them – see the facing page.

THE LAYERS PALETTE IN PHOTOSHOP CS3

When you create an adjustment layer (see facing page), a thumbnail of the adjustment (in this case Exposure) will be displayed, with a mask icon next to it.

To temporarily hide a layer, click the eye icon to the left of the thumbnail. Click in the same box to make the layer visible again.

Use these buttons to link layers, add a layer style, add a mask (Photoshop only), add a new fill or adjustment layer and create a new group (called a set in older versions).



Use this pop-up menu to change a layer's blending mode, and use the adjacent slider to change its opacity – see page 40 for more on both.

When you add a mask to a layer (see facing page), a mask icon will appear next to the layer thumbnail. Click the mask icon to edit the mask rather than the layer.

Click this button to create a new layer, or drag a layer on to the button to duplicate it. To delete a layer, drag it on to the trashcan icon, or right-click/Ctrl-click the layer and choose Delete Layer.

Adjustment layers and masks

Apply adjustments or effects on a separate layer, and hide or reveal them using brushes

Adjustment layers ‘superimpose’ adjustments such as Curves or Levels on the pixels on layers below but without altering those pixels directly. Fill layers apply solid colour fills, gradients or patterns, just as a red acetate overlay will make an image appear red. When you create an adjustment layer or fill layer, a mask will be attached to it; by default this mask will be 100% transparent and will reveal the effect or adjustment that you’ve applied. You can edit the mask by painting on it with brushes to hide or reveal the

effect in particular areas – see the boxout below. The beauty of using adjustment layers is that you can access the original adjustment or fill dialog at any time to make changes, or delete the layer altogether if you change your mind. Because you haven’t altered the information on underlying image layers directly, it will never be degraded or lost.

In Photoshop, you can also add a mask to a regular image layer by clicking the button at the foot of the Layers palette, or by selecting the option from the Layer menu.



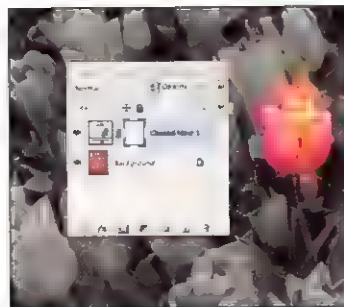
Masks and selections

You can turn a selection created using any tool into a mask. If a selection is active when you create an adjustment layer, the attached mask will be based on that selection. To turn a selection into a mask on an image layer in Photoshop, click the ‘Add layer mask’ button in the Layers palette with the selection active. You can also turn a layer mask into a selection by [Ctrl]/[Command] clicking the mask icon.

WORKING WITH MASKS

Layer masks give you far more options than simple selections

When you add an adjustment layer to an image (or a layer mask to a layer), by default a ‘Reveal All’ mask is created, such that the adjustment you’ve added (or the layer data in the case of a layer mask) will be fully visible. If you paint on the mask with a black brush, the adjustment or layer data will be hidden; you can re-apply the adjustment or reveal data again with a white brush, and grey tones will make it semi-transparent. If it’s easier to hide the adjustment or data and paint it in selectively, create a ‘Hide All’ mask by selecting the mask and pressing [Ctrl]/[Command]+I to invert it, or by holding down [Alt]/[Option] when you add a layer mask.



We used a Channel Mixer adjustment layer to convert to mono, then edited the mask to pick out a single flower

Blending modes

Create subtle transitions between layers, or use one layer to influence the content of another



Blending mode fixes

Some blending modes have an effect even if the layer they apply to contains no image data. The useful ones are Screen, Multiply, Overlay, Soft Light and Hard Light. Add an adjustment layer that doesn't make an immediate change (such as Levels), OK it without altering any settings, then change its blending mode to Screen to lighten the image or Multiply to darken it. Try using Overlay, Soft Light or Hard Light to boost contrast.

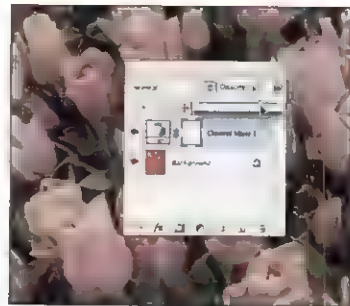
By default, the brightness and colour information of the uppermost layer in an image will define the appearance of that image – for example, if a layer contains red pixels and you place another layer on top containing blue pixels, you'll see only the blue pixels. However, if you set the blending mode of a layer to anything other than Normal (the default), the pixels on an upper layer will interact in different ways with those below. The tonal values of the pixels themselves won't be changed, but the appearance of the whole

image will. The various modes will affect different images in different ways, and even experienced users tend to pick their favourites by trial and error. Only a few blending modes are useful for everyday photo editing, but if you want to create unusual effects, or perhaps combine images to produce stylised artwork, then you can use any blending mode you like. CS3 introduces two new modes: Lighter Color and Darker Color. These compare the colours in two layers and reveal only the lighter or darker colour respectively.

LAYER OPACITY

A layer's opacity also helps to determine its effect on an image

Ordinarily the content of an image layer will completely obscure that of the layers below it (and an adjustment layer will apply in full to layers below), unless part of the upper layer has been masked or erased to let the lower ones show through. But it doesn't have to stay this way. At the top of the Layers palette is an Opacity slider, with which you can set the selected layer's opacity to any value from 100% (completely opaque) to 0% (completely transparent). Among other things, you can use the opacity setting to control the strength of adjustment layers without having to edit their mask or dialog settings, or to combine photo elements into a composite.



We applied a mono conversion layer, then reduced its opacity to reveal a hint of colour from the layer below

Creating clipping masks

By default an adjustment layer affects all layers beneath it, but this doesn't have to be the case

In a multi-layer image, adjustment layers influence every image layer beneath them. This is usually what you want, but not always. To restrict the effect of an adjustment layer, you can use a clipping mask. Once an adjustment layer is clipped to an image layer, the adjustment will affect only that image layer and won't have any influence on other layers in the stack.

You can also clip one image layer to another, so that the content of the lower layer (the 'base layer') will determine what parts of the top layer

(the 'clipped layer') are visible. It's like the opposite of a mask (page 39): black areas or data on the base layer *reveal* rather than hide data or adjustments on the clipped layer.

In Elements, although a mask is automatically generated when you create an adjustment layer, you can't add a mask to an image layer. You can, however, clip two layers together to create a 'clipping group' and then use the Brush and Eraser tools on the base layer to show or reveal parts of the top ('clipped') layer, just as if you were painting on a mask.



How they work

Think of clipping groups as the opposite of layer masks. With a layer mask, you paint in black to make areas of the layer transparent, and white to make areas opaque. With clipping groups, any painted area in the lower layer will make the corresponding part of the upper layer opaque (or visible), and any transparent area will make the upper layer transparent. You work with the Brush and Eraser tools rather than with black or white brushes.

CREATING A CLIPPING MASK

Restrict the effects of an adjustment layer with a couple of clicks

To clip an adjustment layer to the single image layer directly beneath it, create a clipping mask (called a 'clipping group' in Elements). The process is instigated from the upper layer, so select the adjustment layer and then go to Layer > Create Clipping Mask (Layer > Group With Previous in Elements). Alternatively, simply [Alt]/[Option]-click on the line between the two layers in the Layers palette (the cursor will change to a linking symbol to confirm that you're in the right spot). The clipped layer will be indented in the Layers palette, with an arrow symbol to the left of its thumbnail. To unclip the layers, [Alt]/[Option]-click on the line between them again.



Image data (or in this case the text) in the base layer reveals the content of the clipped layer above it

Managing layers

Streamline and organise your Layers palette by creating and labelling groups of related layers



Linking layers

To create a layer group in CS2/3, select the layers by [Ctrl]/[Command]-clicking their thumbnails (or [Shift]-click the first and last layers you want to group to select them all), then click the 'Create a new group' button. To create a layer set in older versions, link the layers by selecting one, then clicking in the box immediately to the left of the thumbnails of the other layers you want to include. Then select 'New Set From Linked'.

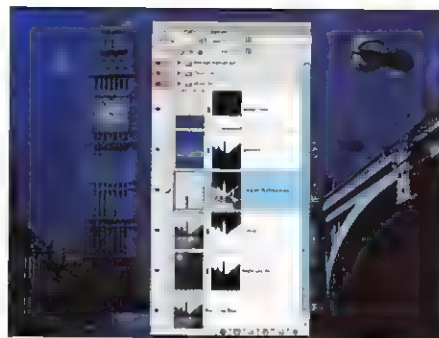


Locking layers

If you're working on a complex, multi-layered composition, it's all too easy to lose track of which layer you have currently active, so that you make changes to the wrong layer or move the wrong objects by mistake. To help prevent this kind of problem, there's a row of buttons along the top of the Layers palette for locking the transparent parts of the active layer, its pixel content, its position, or all of the above. Elements offers only the first and last of these options. A padlock symbol will appear next to the layer to confirm that one or more of these locks applies.

When you have lots of layers, naming them logically will help you keep track of them. Simply double-click on a layer's name in the Layers palette and type in a name.

The other issue is file size. All layers containing pixel content will increase the file size. If this becomes a problem, you can merge some of your layers or all of them ('flatten' the image) using the options in the Layer menu or the palette menu – but beware: after you merge layers or flatten the image, you won't be able to modify them separately any



Layers are powerful tools, but things can get confusing if you don't keep them under control by labelling them and placing them in groups

more. To merge only certain layers, select them first (see sidebar) or hide the others and use Merge Visible.

USING LAYER GROUPS

IF YOU'RE CREATING composite images using lots of layers, organising related layers into groups (they're called 'sets' pre-CS2) will help you to further streamline your workflow – see the sidebar for how it's done.

YOU CAN ALSO create a layer group by clicking the 'Create a new group' button in the Layers palette and dragging layers into the folder, or by dragging linked layers on to the button. When you create a new group, you can colour-code and label it to make it easier to identify.

LAYER GROUPS are useful not only to keep things organised, but also because you can apply effects and adjustments to a whole group.

CLICK THE DISCLOSURE ARROW next to the folder to open a group so you can view and edit the layers individually as required. You can easily remove and reorganise groups: right-click/[Ctrl]-click on a group's icon and you can delete the group while retaining the individual layers.

More options with layers

Store multiple compositions and effects within a single file, and access the layer you want fast

Photoshop enables you to save variants of a montage or other multi-layer project in a single file. Simply go to Window > Layer Comps, click the 'Create New Layer Comp' button and give your comp a name to help you identify it later. Now you can make changes such as repositioning layer content, toggling the visibility of layers on or off, and experimenting with different layer styles. (Note that layer comps don't record every type of edit you might make – see the sidebar.) You can save each new set of changes as a

new layer comp, then quickly jump between different versions of your image by clicking next to each one in the Layer Comps palette. It's a lot faster and easier than toggling the visibility of layers or groups of layers on and off to view different versions of a composition, comps are preserved when you save and re-open the file (unlike History snapshots, though those record more information), and your variations are stored within the file, so you don't need to save several files and juggle them to find the version you want.



What's in a comp?

Each new layer comp records only changes in layer position, layer visibility and layer styles. A comp won't record edits such as filters or colour corrections, or changes to a layer's opacity or blending mode. Note too that if you scale an object up for one layer comp, that object will become scaled up in all the other layer comps as well. The same goes for changes to the stacking order of layers: any change will affect all your comps.

AUTO LAYER SELECTION

Select the layer containing a particular object simply by clicking

You can normally make edits or selections only on the active layer. In a multi-layered image, though, it can be tricky to find the layer that contains the object you want to work on. To quickly select the right layer, press V for the Move Tool, go to the tool options bar and enable Auto Select Layer, then click on the object you want in the image – Photoshop will work out which layer the pixels belong to and will activate it. If objects overlap at that point, right-click/[Ctrl]-click and you'll get a menu listing all the layers under the cursor; just select one in the list to activate it. In Elements you'll get an Arrange menu you can use to alter the layer stacking order.



Click on the object you want and its layer becomes active. In CS2/3 there's also an Auto Select Groups option.

Auto-Align and Auto-Blend

Two new options in CS3 make it easy to blend photos and create more seamless composites

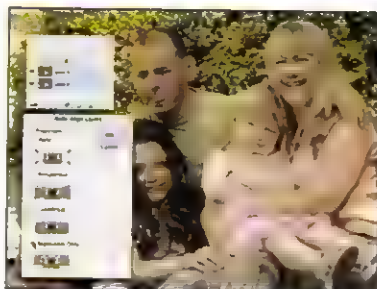


Photomerge alternative

Adobe seems to expect that CS3 users will be wanting to combine photos a lot: yet another new feature in CS3 is an enhanced Photomerge function that enables you to 'paint-in' a replacement head or body from another version of a group shot – see Chapter 6 for details.



Photoshop CS3 has two new features designed to help when you're stitching images together or creating composites. In this family photo, just one person is letting the side down, and we want to replace his head with one from another version of the shot. Start by opening the version in which most of the family are fine, select all, copy, then switch to the other shot and paste.



The pasted shot becomes a new layer on top of the shot we want to use the head from. First, though, select *both* layers (click on one layer thumbnail, hold down [Shift], then click on the second) and go to Edit > Auto Align Layers. In the dialog, select Reposition Only. Photoshop analyses the layers and moves, rotates or warps image elements so that they align on both layers.



Auto-Blend

A related new option is Auto-Blend. To use it, you select both layers as we did in step 2 and align their content, either manually or using Auto-Align, then go to Edit > Auto-Blend Layers. This command matches colour and shading and applies layer masks as needed to each layer to mask out differences in exposure or content, so it's ideal for blending two differently-exposed versions of a landscape photo, for instance. But it won't help much in our family shot – another layer mask will only get in the way when you're masking out the head here.



Now click on the top layer again to select it only, then add a layer mask. Make sure you've got the mask selected, not the layer itself, take a large black brush, and paint over the head you want to replace. This masks out the top layer, so the version on the lower layer gradually appears. Keep painting until you've masked out all of the 'bad' head and revealed all of the 'good'.



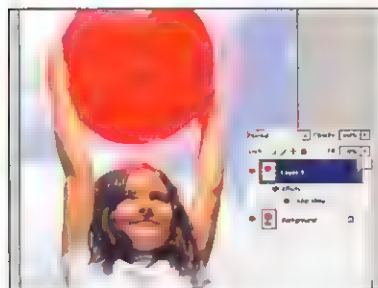
Thanks to Auto-Align, surrounding details should match up very closely, so you don't need to trace the head's outline precisely or cut it out accurately (as you would have had to do in conventional compositing), and it should need minimal retouching around it – but if necessary, you can use a midtone-grey brush to partially mask areas for a more gradual blend.

Layer Styles

Use these for frames, artistic effects or shadows – and they're great for creating web buttons



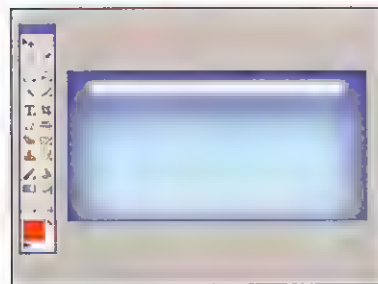
In any multi-layered image, you can add a range of effects to any layer. In Photoshop, go to **Layer > Layer Style** and you can select from a variety of advanced blending options or add glows, overlays, outline strokes and other effects. If the layer contains a cut-out object, these effects are added to the object; otherwise they apply to the whole layer and create a quick 'frame'.



The highly-configurable drop shadow option can add very credible shadows to make pasted objects look more realistic in composites. Here we selected the ball, used [Ctrl]/[Command]+J to float it to a new layer, then added a rough Outer Glow effect to it. You can fine-tune this later by double-clicking on the layer effect icon next to the layer's name or on the effect name below.



In Elements, you access layer styles via the Effects palette (Window > Effects), and you'll find a wider range of options including Photographic Effects, which offers another way of toning images. The Complex, Image Effects and Patterns options have the most immediate results – the last two fill a photo or selection with special effects. The Image Effects options work much like filters.



Like to make a '3D' button in Elements? Create a new file with suitable pixel dimensions – say, 200x100. A blank button shape will appear on the canvas. Double-click the layer thumbnail to unlock it, OK the dialog, then select Wow Plastic from the Layer Styles, choose a colour and double-click it. Your blank shape will be transformed into a very effective-looking plastic button.



Fine-tune your button

When you've created a 'plastic' button as in step 4, try out the different colour options, and add a text label if you wish using the Type Tool. You can also add different layer styles to the text, for example to create a glow around it. To finish, resize the file to dimensions that are suitable for your web page



Custom layer styles

Customise your layer style effects using the options in Elements' Style Settings dialog. Use the Lighting Angle dial and Distance settings to change the position of a drop shadow, and adjust Size and Opacity to suit the surroundings.

The Bevel option adds a chiselled 3D-button effect to the selected layer; use the Up and Down direction options to change the direction of the lighting for the relief effects. The Stroke effect adds a simple frame around a layer; use the Size option to set its width, and adjust Opacity to taste.

Chapter 4

CORRECTING EXPOSURE AND TONE PROBLEMS

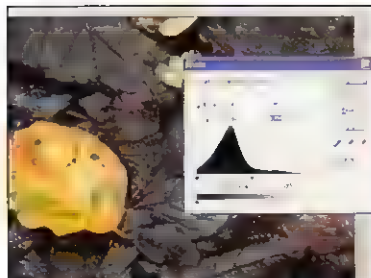
There are several tools for correcting over- or underexposure, rescuing detail lost in shadows or highlights, and boosting contrast, as well as a special way to fix Raw files non-destructively

No matter how skilled a photographer you are or how good your camera may be, you're bound to end up with some photos that are incorrectly exposed. Auto-metering systems can easily be fooled by tricky lighting conditions such as strong contrast, and in some situations it's just not physically possible to get exposure spot-on – in bright sunshine, for example, if you expose for the sky you'll lose foreground detail in shadow, while if you expose for the foreground you'll end up with the sky blown out. Unsurprisingly, Photoshop and Elements are packed with features for diagnosing and fixing exposure

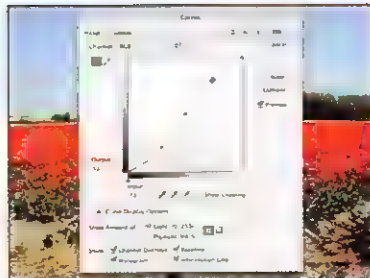
problems. You can make very precise adjustments to correct almost any degree of over- or underexposure, and you can target your adjustments in the parts of the tonal range that need correction without affecting correctly-exposed areas. At the other end of the scale, you might find that a single click with one of the auto-adjustment tools is all it takes to get a shot spot-on.

The Raw advantage

Speaking of the increasing technical sophistication of cameras, more and more models these days offer the option of saving your shots as Raw files. If yours has this option, there



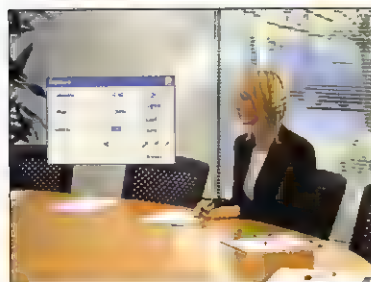
Page 49 The Levels dialog is the first port of call for most tonal adjustments



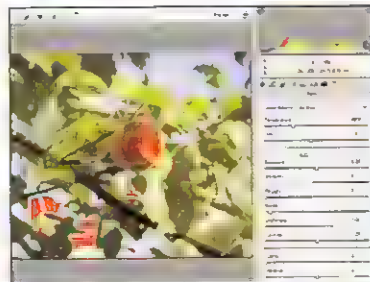
Page 50 Use Curves for more precise changes to parts of the tonal range



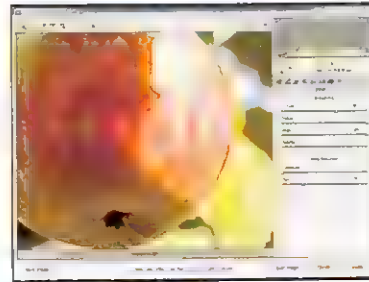
Page 51 Target dark and light areas separately using Shadow/Highlight



Page 52 Tackle a variety of exposure problems without affecting colour



Page 54 Adjust Raw files using the powerful Adobe Camera Raw plug-in



Page 57 Discover Adobe Camera Raw's comprehensive range of controls

are many advantages in using it. A Raw file is like a 'digital negative' containing the image data actually captured by the sensor, with almost no in-camera processing whatsoever. By contrast, JPEGs in particular are heavily processed to save space and fit more shots on your memory card. This means you have less image data to start with, even before you begin the image-editing process. Raw files give you the maximum amount of image information to play with.

Editing Raw files

'Raw' isn't a file format like JPEG or TIFF: every make of camera, and often each different model, may use

its own proprietary Raw file format. You can't actually open these files directly in Photoshop or Elements; you need the Adobe Camera Raw (ACR) plug-in, which comes with both programs and is designed to process and adjust Raw files. It can fix a range of flaws, particularly tonal problems, before optionally passing the edited image on to the host program for further work. ACR is frequently updated to add new features and support for new camera models, and the latest version can actually process other file formats as well as Raw files. Try it on your JPEGs and see the difference fully-non-destructive editing can make!

Understanding histograms

Analyse an image's tone and colour balance at a glance, so you can target problem areas



Broken graphs

As you edit an image, its new histogram is displayed in black on top of its old graph in grey. Colour editing and image enhancement are a destructive process, because a certain amount of image information is lost during the process. This data loss is represented as gaps and thin spikes in the histogram. If an image's histogram is starting to look very gappy and ragged, avoid making many more edits, or at least keep them subtle.

The histogram (Window > Histogram, or in the Levels dialog) is a vital tool for analysing an image and assessing the impact of your edits. It represents the tones in your image in graph form, from black at the left to white at the right. The height of the graph at any point represents the relative number of pixels in the image (or selection, or selected layer) with that intensity value. The exact shape of the graph isn't important, but a well-exposed image should have information right across the tonal range from the far

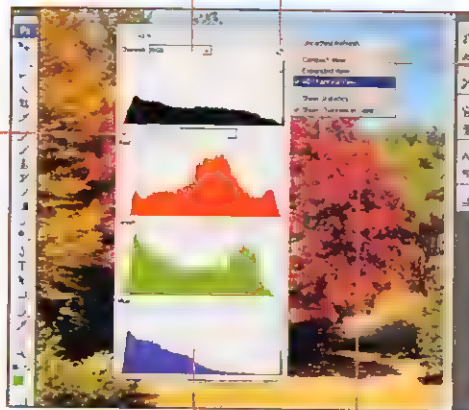
left to the far right. A graph clumped at the very left (lots of shadows and perhaps some midtones, but few highlights) suggests underexposure, while one clumped at the right is characteristic of overexposure. If information doesn't taper down at the left or right edges but looks 'cut off', this suggests that some detail has been 'clipped' – areas have been rendered pure white or pure black where they should have tonal detail. There are options for displaying colour information as well as tones – see Chapter 5 for more on colour.

THE HISTOGRAM PALETTE

Use the Channel menu to view histogram data for the entire image, for individual channels (see Chapter 5), or for brightness information. You can also display channel information in colour.

The Source menu will be greyed out until you add layers to the image; you can then opt to view histograms for selected layers.

It's normal for each colour channel's histogram to be a different shape – you can see that there's a lot of deep blues in this image.



If you've edited the image, the histogram may display cached data, not live, and an alert triangle. To update it, click this symbol, the alert triangle below, or Uncached Refresh in the palette menu.

Use other options in the palette menu to expand and contract the palette, show or hide statistics, and display all channels simultaneously.

Show statistics to see the intensity values of the pixels under the cursor. Other stats appear in the Info palette, with which the Histogram palette is usually grouped.

The Levels command

The Levels dialog is likely to be your first port of call for making manual tonal adjustments

The Levels dialog (Image > Adjustments > Levels in Photoshop, Enhance > Adjust Lighting > Levels in Elements, or [Ctrl]/[Command]+L) enables you to diagnose tonal problems using a histogram display and also fix many of them. Beneath the histogram are black point, white point and midtone sliders, which you can use to adjust the brightness levels of pixels in the corresponding area of the image's tonal range. If the graph doesn't reach all the way to the left, you can move the black point slider inwards

to meet the start of the graph. This remaps the darkest pixels in the image to black and adjusts the rest of the image accordingly. Move the white point slider inwards to remap the lightest pixels to white – this can help add punch to flat, washed-out images that lack contrast. Moving the midpoint slider darkens or lightens the midtones and thus the image as a whole – it's best to keep these overall brightness changes subtle. Enable the Preview option so that you can see the results of your adjustments in the main display.



Levels and clipping

To avoid introducing clipping as you adjust Levels, hold down (Alt)/(Option) as you move the sliders: pixels will turn red, green or blue as the corresponding channel is clipped, and cyan, magenta or yellow as pairs of channels become clipped.

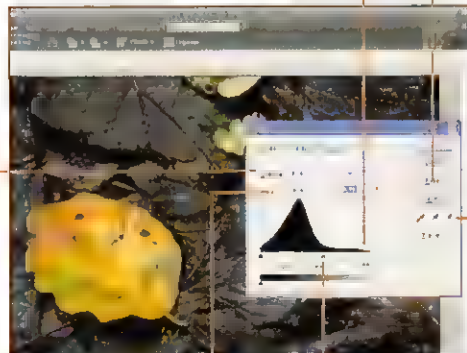
Highlights clipped in all three channels will turn white as you drag the white point slider, and shadows clipped in all three channels will turn black as you move the black point slider.

THE LEVELS DIALOG

This histogram falls short of the highlights (right) end of the scale. By dragging the white point slider to meet the edge of the highlight data, you restore brilliant whites and a full contrast range.

You can view and adjust levels in separate channels rather than the image as a whole – simply choose a channel in this pop-up menu.

The shadow, midpoint and highlight values will update as you move the sliders. It's possible to type values in, but using the sliders is far simpler and more interactive.



Use the Auto button to set the levels automatically. This can fix some photos straight away, so it's worth a try.

You can also set the levels by clicking on the darkest part of the photo with the Set Black Point eyedropper (the first one), or on the lightest part with the Set White Point eyedropper (the last one).

The midtones slider has been moved slightly to the right here to darken the image overall – it was a bit too light after we moved the white point slider.

The Curves command

You can also adjust a photo's tonal range using the more precise controls in the Curves dialog



The Elements version

Elements' Adjust Color Curves command (under Enhance > Adjust Color) actually alters tone and contrast, just as Curves does in Photoshop. The difference is that you can start by selecting from various presets in Elements 6, and you make adjustments using sliders rather than manipulating the curve directly. In Elements 5, open the Advanced Options panel to access the slider controls.

Photoshop's Curves dialog (Image > Adjustments > Curves) does a similar job to Levels, enabling you to edit the tonal values of an image. However, where Levels lets you adjust shadows, highlights or midtones, Curves enables you to target specific parts of an image's tonal range. This range is displayed as a line, each point on which is a precise tone level from shadows at the bottom-left to highlights at top-right. The shape of the curve shows how the image's original 'input' tonal values (represented along the

horizontal axis) are adjusted or remapped to new 'output' values (along the vertical axis). It starts as a diagonal line, but you can change its shape by placing and manipulating anchor points – dragging a point upwards lightens the pixels in that area of the tonal range, and dragging a point downwards darkens them. You can click on the curve to place up to 14 control points, or [Ctrl]/[Command]-click on the area you want to adjust in your image and a control point will appear at the corresponding tone on the curve.

THE CURVES DIALOG

As in the Levels dialog, you can edit the composite RGB image or work on the individual colour channels.

You can click on the line to add points, then manipulate them, or click the pencil icon to draw a curve by hand – but if you do, use the Smooth button. The further the curve is from a diagonal line, the more the image 'posterises'.

Just as in Levels, these eyedroppers enable you to set black, midtone and white points by clicking in different parts of your image.



The most common Curves adjustment is to create a gentle S-shape, darkening dark tones and lightening light ones to boost contrast.

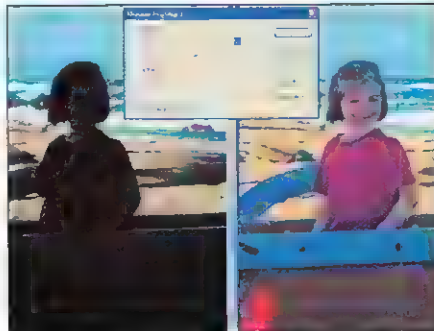
Click Auto to apply an automatic tonal and colour correction, and click Options to customise the settings that will be applied by the auto correction (see page 53).

In CS3, you can enable a clipping display in the main window – toggle it on and off to switch between the image preview and clipping display.

Shadow/Highlight

Lighten shadows or darken highlights in a shot without affecting correctly-exposed areas

Photoshop users have a powerful tone/colour adjustment tool in the shape of the Shadow/Highlight command, located in the Image > Adjustments menu. The dialog has several sliders that enable you to reveal colour and detail hidden in an image's shadows or highlights. It's ideal for salvaging badly exposed photos, such as a shot of a person in shade with a bright background behind. When you use Shadow/Highlight, Photoshop analyses your image to determine the shadow and highlight areas, and adjusts these



The results may not be perfect, but as a salvage operation for 'ruined' shots, Shadow/Highlight can be extremely effective

without affecting the rest of the shot, so you don't need to select the area you want to edit first.



The Elements version

Elements has a simplified version of the Shadow/Highlight dialog – go to Enhance > Adjust Lighting > Shadows/Highlights. The dialog features just three sliders, for adjusting shadows, highlights and midtone contrast. These work in a similar way to the corresponding sliders in the Photoshop version, but you don't have the additional controls, so you won't be able to edit images with the same degree of precision.



Advanced controls

Shadow/Highlight adjustments can have the side-effect of flattening contrast; use the Midtone Contrast control to compensate. A Shadow/Highlight adjustment can produce halos around high-contrast edges in your image – reduce the Radius setting a little if these are too prominent. The Black and White Clip values are used for specifying the extreme shadow and highlight points; they'll need to be adjusted only for very poor quality photos.

SHADOW/HIGHLIGHT OPTIONS

- ☒ **THE DEFAULT AMOUNT** setting is 50% for Shadows and 0% for Highlights. You can adjust these in combination with the following options, which appear when you tick the Show More Options box.
- ☐ **TONAL WIDTH** determines which pixels are affected by the adjustment. A low setting will focus the adjustment on the darkest or lightest pixels, while a higher setting will include a greater tonal range.
- RADIUS DETERMINES** how many pixels around a given pixel are analysed to determine whether that pixel is a shadow or a highlight. You'll need to experiment with different settings, in tandem with Tonal Width – if the Radius is too large, the adjustment tends to brighten or darken the whole image rather than just the problem area.
- COLOUR SATURATION** can be altered slightly when you apply the adjustment – the Color Correction slider enables you compensate.

Brightness/Contrast & Exposure

You can correct underexposed or overexposed photos using a variety of tools and options



Brightness/Contrast

In Elements and pre-CS3 versions of Photoshop, the Brightness/Contrast dialog shifts all the tonal values in an image, so if you increase brightness the whole image lightens very quickly and highlights soon begin to clip. In CS3, the command applies 'proportionate' adjustments, as Levels and Curves do – if you brighten a shot, shadows lighten more than areas that are already light – though you can set it to apply the older method.

It's quite a challenge to capture an accurate exposure with good detail throughout the shot's shadows, midtones and highlights. If your image suffers from general over- or underexposure, you can try the Brightness/Contrast dialog (under Image > Adjustments in Photoshop or Enhance > Adjust Lighting in Elements). This deceptively simple dialog has just two sliders for adjusting the tonal range of an image globally, though it can be more effective when used on a selection rather than on an entire



This shot is noticeably underexposed, resulting in dull highlights and a lack of detail in the image's midtone and shadow range

image. It has been 'enhanced' in CS3 and now works quite differently (and more subtly) – see the sidebar.

THE EXPOSURE DIALOG

Tackle a variety of exposure problems with this powerful tool

Photoshop CS2/3's Exposure dialog (Image > Adjustments > Exposure) features three sliders. The Exposure slider adjusts the image's highlight values with minimal effect on extreme shadow levels. The Offset slider is for darkening the shadows and midtones, so it's useful if your shot is overexposed. The gamma slider is like the midtones slider in the Levels dialog. Click in the image with one of the eyedroppers to make the point you click on the reference point for black, grey or white respectively. Note though that the eyedroppers work a little differently from those in Levels or Curves: in Exposure, they set only brightness values without affecting colour casts.

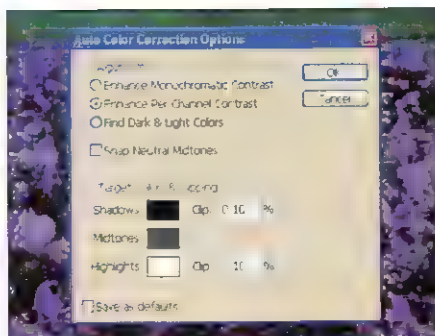


The sliders in the Exposure dialog enable you to adjust the image's tonal range without affecting colour

Automatic corrections

Use the various Auto correction options in Photoshop and Elements for an instant fix

While Photoshop is packed with professional features, it also provides three quick-fix options for tackling common problems such as underexposure, overexposure and colour casts. You'll find the Auto Levels, Auto Contrast and Auto Color commands in the Image > Adjustments menu, and in theory one of these should do a reasonable job of correcting your image – you're not supposed to apply all three adjustments to the same image. Auto Levels and Auto Color will adjust an image's colours if this is



Click the Options button in the Levels or Curves dialogs and you can configure the settings that will be used by Auto Levels, Contrast and Color

deemed necessary, while Auto Contrast adjusts the overall contrast between light and dark areas.



Hit and miss

The Auto Levels command is applied to an image on a channel-by-channel basis, and this is helpful if an image suffers from a colour cast, because any bias towards one colour channel will be balanced out. However, since it's a 'blind' correction – for example, Photoshop can't tell the difference between an orange cast and a photo of a bowl of oranges – the command can add a colour cast to some images.



The Elements version

Elements also has Auto Levels, Auto Contrast and Auto Color Correction – you'll find them under the Enhance menu or in the pane on the right of the Quick Fix interface, the advantage of the latter being that you can fine-tune the adjustment using sliders.

The Auto Smart Fix command applies contrast, tone, colour balance and colour saturation corrections in one hit. Again, you can alter the strength of the effect (using a slider in Quick Fix mode or Adjust Smart Fix in the Enhance menu), but you can't fine-tune colour separately from contrast.

AUTO LEVELS, CONTRAST AND COLOR

- ☐ **AUTO LEVELS** adjusts the black and white points in each channel of your image so that the darkest pixels are clipped to pure black (0) and the brightest pixels are clipped to pure white (255); all tones in between these two extremes will be adjusted accordingly. The result is the same as moving the White and Black Point sliders inwards in the Levels dialog (page 49) but without the option of then tweaking the midpoint.
- ☐ **AUTO CONTRAST** adjusts the contrast and colour of an image as a whole rather than on a channel-by-channel basis. Again, shadows and highlights will be clipped to pure black and white values.
- ☐ **AUTO COLOR** adjusts the contrast and colour of an image by clipping shadows to 0 and highlights to 255 while also neutralising midtones to a target value of 128. An Auto Color adjustment will often be enough to remove a colour cast from a photo, as long as the image has a good range of colours on which Photoshop can base the correction.

Adobe Camera Raw

Use ACR to adjust Raw files before saving them or opening them in Photoshop or Elements



Done, Save and Open

Click **Done** and any edits or adjustments you've made to your image in ACR are saved in a 'sidecar' XMP file. The Raw file itself is untouched, but your edits are applied to it anew whenever you open the file again. **Save Image** saves to XMP and saves a copy of the edited file in a format of your choice. **Open Image** saves XMP and opens the edited file in Photoshop/Elements for further work. **Cancel** closes the file without applying any changes.

The Adobe Camera Raw (ACR) interface is triggered whenever you open a Raw file via Bridge or the Organizer (see Chapter 8), from Photoshop or from a folder location. If you open multiple Raw files via Bridge, ACR launches in Filmstrip Mode, enabling you to access all the images, apply multiple edits and synchronise the edits across images: simply select one image, make your changes, highlight the others and click **Synchronize** with the original image still selected. Opening multiple images elsewhere launches

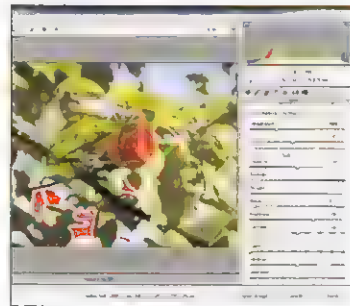
the dialog for each image in turn; close one and the next appears.

ACR's principle is that the original file is never altered: any adjustments you make are applied to a *copy* of the image created when you click **Save** or **Open Image** (see sidebar). If you click **Done**, your edits are saved alongside the Raw file and applied to it anew whenever you open the file again – but since the original remains untouched, you can tweak them at any time or revert to the unaltered image by selecting 'Camera Raw Defaults' again.

VERSIONS OF CAMERA RAW

Download and install the latest version of the plug-in

ACR is a plug-in – a 'mini-program' that adds extra features to Photoshop or Elements when you install it in your program's Plug-Ins folder. ACR is updated from time to time in order to add more features and support for the latest camera models, and it's worth installing the latest version you can use. As we go to press, the latest version is ACR 4.2, which is compatible with Photoshop CS3, Elements 5.0 for Windows or Elements 4.01 for Mac. You'll find the update and instructions on how to install it at the website below. If you're using an older version of Photoshop or Elements, you'll also find details of which version of ACR is compatible with your software.



Click the clipping warning buttons at the top of the histogram to reveal any clipping in the Preview window

www.adobe.com/downloads/updates

Accessing ACR's tools

Instead of a floating tool palette, ACR puts a set of tools in a bar across the top of the screen

The Zoom and Hand tools are the first in the tool bar but you can zoom the preview window in the usual way with [Ctrl]/[Command] and + or – and move around the image by holding down the spacebar and dragging. To remove colour casts (see page 60), select the White Balance Tool (I) and click on an area in your image that you know should be a colour-neutral light grey or diffused white. To crop an image, select the Crop Tool (C) and drag to outline the new image area. To level a tilted shot, simply draw with the

Straighten Tool (A) along a line in the image that should be horizontal. The Rotate buttons do just what they say. The Red Eye Removal tool (E) gives you a one-click way to remove red-eye. In Photoshop (but not in Elements) the Color Sampler Tool (S) records precise colour data about an area that you can later refer to in your edits, and the Retouch Tool (B) is useful for dust removal – it comes into its own when applied across several images in Filmstrip Mode. Learning the keyboard shortcuts for all these tools will save you time!



Other options

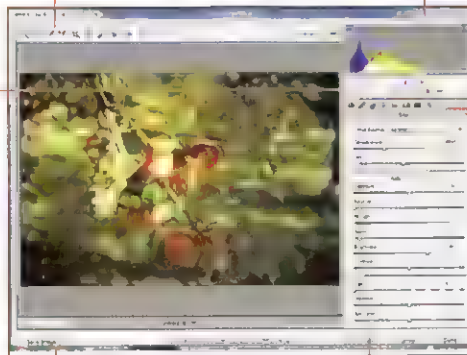
You can alter various settings by clicking the Open Preferences Dialog button or using the shortcut [Ctrl]/[Command]+K. Note that these settings apply only to the Camera Raw editor, not to Photoshop or Elements itself. You can also toggle Full Screen mode on and off by clicking the button at the right-hand side of the ACR tool bar or by pressing F.

THE ACR INTERFACE

The tool bar includes tools such as Crop, Straighten, Retouch, Red Eye Removal and White Balance. You can access ACR Preferences from here too.

Here you'll find RGB tonal information for specific pixels as well as metadata for your image. Details of the file and version of ACR appear at the top and bottom of the screen.

Along the bottom run the Save, Open, Cancel and Done buttons and the 'workflow options' – just click the link to change these, though you won't usually need to do so.



The histogram shows how your image appears in tonal terms and is updated in real time as you make your edits. (See page 48 for more details about histograms.)

This series of buttons enables you to move between tabs to make a whole range of edits. The default is the Basic tab, which is usually where you'll want to start.

The options for the selected tab appear in this panel. You use the sliders and various drop-down windows to adjust your image as you work through the tabs.

ACR's Basic tab

The Basic tab contains the most important tools for editing the tones in your image



Clarity and 4.1

New in version 4.1 of Adobe Camera Raw is the Clarity function, which effectively increases contrast at a local level to make your images appear a little sharper and punchier. It appears to have a similar effect to increasing contrast while decreasing saturation slightly, though applied to edges only. It's a bit of a gimmicky setting but useful if you want to give images a more artistic feel.

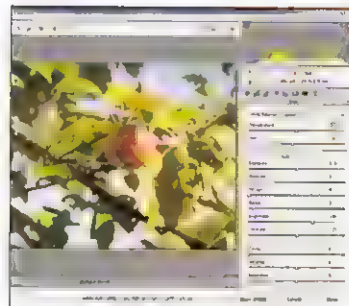
The Exposure slider is good for lightening or darkening an image overall. If it has very bright highlights, lighten with Brightness instead, which is similar to Exposure but works more on the midtones, so you're less likely to 'clip' highlights (push them to pure white so detail is lost). Recovery is good for rescuing highlights that are still clipped after a general Exposure correction, but it can take the zip out of non-clipped areas, so use only when necessary. Fill Light lightens shadow areas only, but use it sparingly: it worsens

noise and shows up colour shifts. Blacks sets the point on the image's histogram at which pure black will start – a setting of 1 to 3 is advisable to avoid clipping shadows (pushing them to black). Contrast moves data outwards from the midtones when increased to produce darker shadows and brighter highlights, and the reverse when decreased. Saturation increases or decreases the vividness of colour; Vibrance works in the same way but also attempts to avoid clipping in areas of more natural colour like skin tone.

WHITE BALANCE

Neutralise a colour cast or add one for creative effect

Different light sources – midday sunlight, household bulbs, fluorescent tubes – all have different 'colour temperatures', so everything can appear too blue or too orange (see page 60). Our eyes manage to adapt but digital camera sensors often can't, so you can use ACR's White Balance Tool (T) to neutralise blue or orange casts in shots and make whites look white. The Temperature slider controls the degree of blue or orange, and the Tint slider helps remove the green or magenta cast that fluorescent light can produce. You can also use the White Balance Tool to neutralise a colour cast by clicking on an area that you know should be colour-neutral.



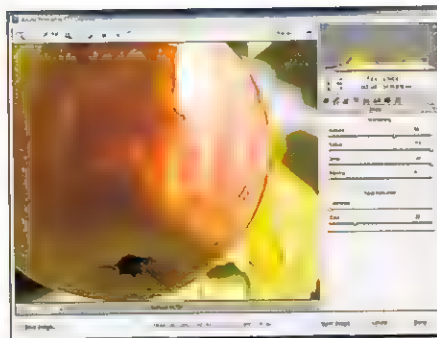
There are no neutral greys or whites in this shot, so you can't use the White Balance tool and have to work by eye

Detail, Toning, Lens Correction

ACR's final three tabs (two of them Photoshop-only) offer a bit more image editing control

Camera Raw's Detail tab gives you options for sharpening and noise reduction. Digital camera capture has an inherent softening effect, so all images need sharpening to some degree. The Sharpness slider in versions of ACR before 4.1 is quite crude, but the new controls in ACR 4.1 give you options similar to Unsharp Mask – see the sidebars.

Noise (digital 'grain') increases at higher ISO settings and is also worse in underexposed images. There are two forms, luminance (greyscale) and colour noise; the sliders can help



You need to be viewing your image at exactly 100% for sharpening and noise reduction adjustments to be previewed

fix both. Luminance tends to be the more problematic, and reducing it involves an inevitable loss of detail.



Sharpening controls

Increase the Amount value to increase the degree of sharpening. In general, set Amount to a lower value for cleaner images. Radius adjusts the size of the details to which sharpening is applied. Photos with very fine details may need a lower radius setting. Photos with larger details may be able to use a larger radius. Using too large a radius will generally produce unnatural-looking results.



More sharpening controls

Detail adjusts how much the sharpening process emphasises edges. Use a low setting unless you want to really make textures in your image look pronounced. With a setting of zero for Masking, everything in the image receives the same amount of sharpening. With a setting of 100, sharpening is mostly restricted to edges – useful if there are areas like bad skin (or noise) that you don't want to make more pronounced.

SPLIT TONING AND LENS CORRECTION

- ☐ **SPLIT TONING** (not available in Elements) enables you to tone mono images with two different colours – one for the highlights and one for the shadows. First go to the HSL/Grayscale tab and tick 'Convert to Grayscale'. Now go back to the Split Toning tab and move the Saturation in the Highlights section right a little. Now adjust the Hue to suit, then Saturation. Do the same with the Shadows to tone these separately.
- ☐ **THE LENS CORRECTION TAB** (not available in Elements – see page 107) enables you to fix lens- (or camera-) induced flaws. Chromatic aberration most commonly appears as coloured fringes around highlight edges (though there can be other causes of fringing). You can remove them with the slider or automatically with the new Defringe function.
- ☐ **THE VIGNETTING SLIDER** tackles darkening at the corners of the image (common with wide angle lenses at wide apertures). Increase Amount to reduce vignetting, and use Midpoint to adjust the size of the correction.

CORRECTING AND IMPROVING COLOURS

Whether you just want to correct your colours, edit your photos in more creative ways, or turn colour shots into stunning monochrome, you have a host of powerful tools to choose from

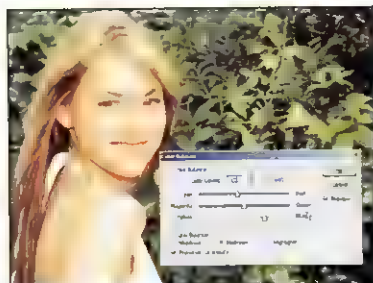
When you look at an image on your computer screen, every pixel in it is a specific colour defined by a precise 'formula' of red, green and blue light intensity, measured on a scale from 0 to 255. R 200, G 60, B 170, for example, is a bright pink. 0,0,0 means no light in any channel, so the pixel will be pitch black. 255, 255, 255 denotes full intensity in all three channels, so the pixel will be pure white. The optical effect of millions of pixels, like a mosaic made up of really tiny tiles, is rich, photo-realistic colour.

Most of the time you'll work with the composite RGB image, but it's also possible to view and edit colour

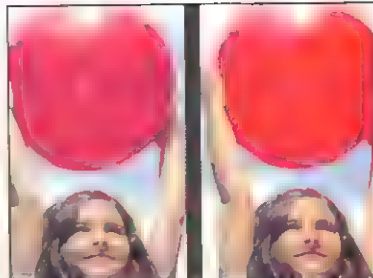
channels separately (most directly via Photoshop's Channels palette) – so you can reduce the red in our pink pixel, say, separately from the green and blue (which will have the effect of making that pixel more purple).

Colour modes

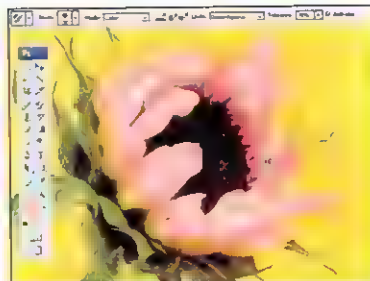
In addition to RGB, colours can be described in terms of the mix of inks used to produce them in commercial printing: cyan, magenta, yellow and black (the 'key' colour, which is why the mode is called CMYK and not CMYB). Elements doesn't support CMYK, though, and unless you're a print professional you don't need it: home photo printers (particularly



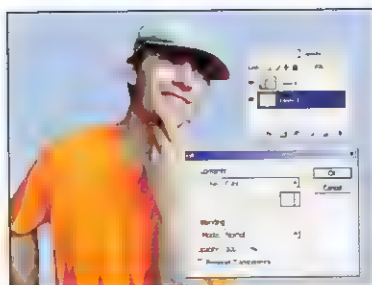
Page 60 Quickly remove a colour cast using Photoshop's Color Balance dialog



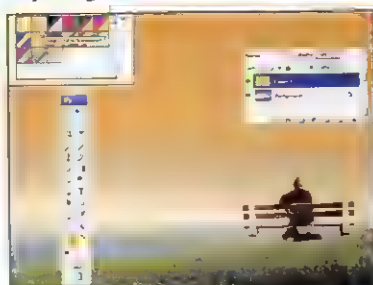
Page 62 Correct your colours the easy way using Elements' Quick Fix sliders



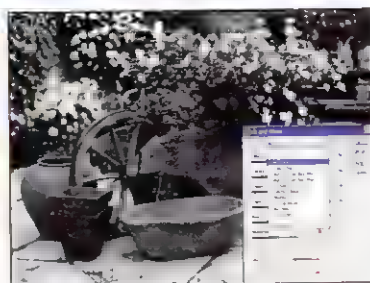
Page 69 Simply brush on a new colour using the Color Replacement Tool



Page 71 Quickly fill areas of an image with colour using a variety of options



Page 72 Create striking skiescapes and other effects using the Gradient Tool



Page 76 Choose a preset mono effect in CS3, or apply a custom conversion

those that use a five- or six-colour process) all translate colours automatically, so keep images in RGB and let the printer handle the conversion when you print.

Using colours

In some places – the Color Picker in both Photoshop and Elements, for example – you can define colours in yet more modes: HSB defines them in terms of hue (the basic colour), saturation (the depth or richness of the colour) and brightness (lightness or intensity); Photoshop also offers Lab mode, which maps colours on a red-green axis (a), a blue-yellow axis (b), and a third Lightness axis (L).

Whichever colour mode you use, though, Photoshop makes it easy to work with colours. Swatches near the bottom of the toolbar display the current foreground and background colours – the former is the colour that will be applied by any brush or fill tool you choose, and the latter is the colour that the Eraser tools will erase to (see Chapter 7). We'll show you how to change these colours (page 70), but you can reset them at any time to the default black and white by pressing D, and swap the foreground and background colours by pressing X. To begin this chapter, though, we'll look at simpler, more 'photographic' colour editing.

Correcting colour casts

Photoshop offers several ways of fixing colour casts caused by incorrect white balance settings



Elements alternatives

Photoshop Elements doesn't include the Color Balance dialog, but it does feature other colour correction tools found in Photoshop, such as the Photo Filter command featured on the facing page, as well as some specialised tools of its own, which we'll look at over the page.

There are several reasons why your camera might not capture the colours in a scene faithfully. A common problem is a cool blue or warm orange colour cast caused by having your camera on the wrong white balance setting or by tricky lighting conditions that confuse the camera's auto white balance function. Photoshop and Elements contain several tools that enable you to quickly remove colour casts, and below we'll show you how to use Photoshop's Color Balance dialog to remove the warm, yellow cast from



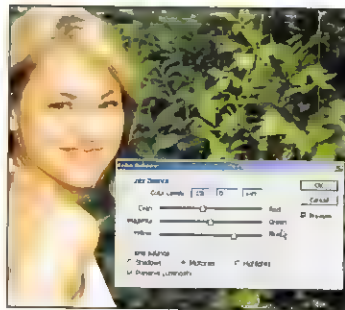
This shot has a warm orange cast, but you can quickly make the colours more natural-looking using the sliders in the Color Balance dialog

this photo, which is particularly evident on the subject's skin and in the background foliage.

THE COLOR BALANCE DIALOG

Remove a cast by targeting colour shifts at particular tonal areas

To fix a colour cast in Photoshop, go to Image > Adjustments > Color Balance. By default Midtones is selected in the Tone Balance section of the dialog; you can also target your adjustments at an image's shadows or highlights, but a midtones adjustment will usually do the trick. To cool down a warm shot like ours, you need to remove some red and yellow, so drag the Yellow/Blue slider towards Blue and the Cyan/Red slider towards Cyan. To warm up a cool image, drag the sliders the other way to remove blue and cyan and add red and yellow. The Magenta/Green slider can be used to remove casts caused by fluorescent lighting.

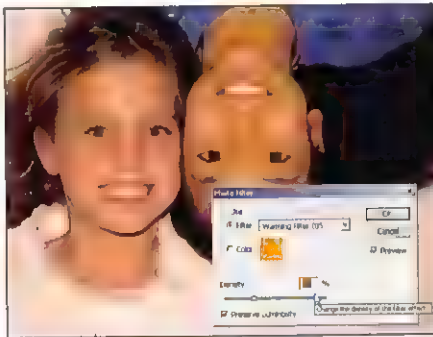


We could cool the image down more than we have here, but a subtle yellow cast helps to flatter our blonde subject

Photo Filter

Remove colour casts with a single click by choosing from a list of preset adjustments

The Photo Filter dialog (Image > Adjustments > Photo Filter in Photoshop, or Filter > Adjustments > Photo Filter in Elements) is a great example of a tool that's easy to use but can produce very impressive results. The dialog has a selection of preset colour adjustments, including some that replicate the effects of lens filters. You can use these to quickly remove a colour cast (or add one for creative effect), as well as apply other colour effects such as sepia tints. You can also create a custom colour effect by clicking the



This image was a little too cool; we were able to quickly warm it up by selecting Warming Filter (85) and increasing the Density a little

colour swatch in the dialog to open the Color Picker (see page 70) and choosing any colour you like.



Adjustment layers

You can apply the Photo Filter options as adjustment layers, and this enables you to experiment with the various settings without permanently changing the colours in your original image. You can also turn the adjustment layer on or off to see how it affects your image, or go back and change the colour at a later stage. See Chapter 3 for more on adjustment layers.

PHOTO FILTER OPTIONS

WARMING FILTER (85) AND (LBA) – These two filters are designed to warm up images that have a cool, blue colour cast – we used the former to correct the image shown above. The LBA filter is available only in newer versions of Photoshop and Elements.

COOLING FILTER (80) AND (LBB) – These two filters can be used to remove warm, orange colour casts. The LBB filter is available only in newer versions of Photoshop and Elements.

WARMING FILTER (81) and Cooling Filter (82) tint the entire image to make it more yellow or more blue respectively. They have a more subtle effect than the other warming and cooling filters.

YOU CAN ADJUST the strength of the colour adjustment using the Density slider. This is set to 25% by default, but you'll often find that you can safely increase this figure a little.



Preserve Luminosity

When you apply a colour adjustment to a photo, it has an effect on the image's luminosity or brightness, and this effect can be quite dramatic if, for example, you're removing a severe colour cast. In the Photo Filter and Color Balance dialogs, and in the dialogs for other colour adjustment tools, you'll see a Preserve Luminosity option, which is always enabled by default. This prevents your colour adjustments affecting the image's brightness levels, so you'll usually want to leave it enabled.

Elements Quick Fix

Correct colours the easy way using the sliders in the Color section of the Quick Fix interface



Why 'temperature'?

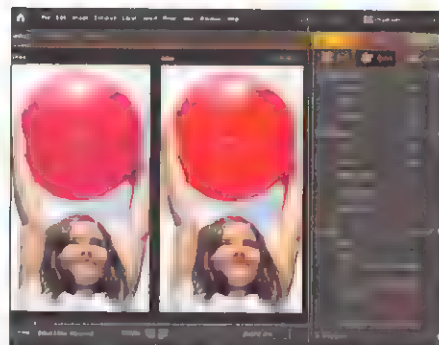
Different light sources have different colour temperatures, measured in kelvins (named after Lord Kelvin, the 19th century scientist who identified the phenomenon). Daylight has a 'cool' colour temperature of around 5,200K and thus is bluish, though this varies widely with time of day and weather conditions; indoor lighting has a 'warm' colour temperature of around 3,200K and is more orange.



Quick Fix on selections

Remember that you don't have to apply Quick Fix adjustments to an entire image – you can select part of the image first using the Selection Brush, Magic Selection Brush (Elements 5) or Quick Selection Tool (Elements 6), and the sliders will then affect only the selected part of the image. If you want to use one of the other selection tools, you'll need to switch to Full Edit mode, make your selection and then switch back to Quick Fix mode to use the sliders; the selection you've made will remain active.

Elements' Quick Fix interface contains a number of tools that enable you to remove colour casts and fix other common colour flaws with the minimum of effort. Smart Fix (see page 53) corrects colour along with contrast and brightness, and you'll find a selection of colour-specific adjustment tools under the Color tab. When you're in Quick Fix mode, you can also access any of Elements' other colour correction tools, such as Adjust Color for Skin Tone (see page 66), in the Enhance menu, enabling you to fine-tune



Use the sliders under the Color tab to make simple adjustments fast – click the buttons at the right of the tab to apply or cancel an edit

your adjustments if the Quick Fix sliders don't do the job, or create more sophisticated colour effects.

QUICK FIX COLOUR TOOLS

AUTO – If you click the Auto button in the Color section, Elements will analyse the shot and adjust saturation and contrast for you. This won't always fix colour casts, though – if it doesn't, try the Temperature slider.

THE SATURATION and Hue sliders work just like the sliders in the Hue/Saturation dialog (see page 66). Saturation makes colours more vivid or more muted; Hue shifts colour values throughout an image.

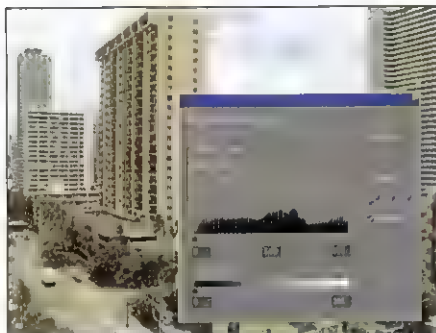
TEMPERATURE – Use this slider to remove colour casts caused by incorrect white balance settings. Drag the slider to the left to cool an image down, or to the right to warm colours up.

THE TINT SLIDER makes colours more green or more magenta. You can use it to fine-tune colours after using the Temperature slider, and to remove magenta or green tints created by fluorescent lighting – simply add the opposing colour.

Quick colour cast fixes

You can remove colour casts in several ways, but you can't do it quicker than with one click

Colour casts are among the most common flaws in digital photos. If the camera was fooled by the light conditions or you used the wrong white balance preset, the shot can appear too warm (orange) or too cool (blue). The fastest way to fix a cast is to add a Levels adjustment layer, select the Set Gray Point eyedropper (the middle one at the bottom-right of the dialog), and click on a spot in the photo that should be a colour-neutral grey, no matter how dark. Photoshop will make that area grey and adjust the colour balance



The stretch of road in this yellow-tinged photo provides a handy reference point for the Set Gray Point eyedropper

of the rest of the shot accordingly. You may need to click in a few different areas to get the right result.



Other eyedroppers

The Set Black Point and Set White Point eyedroppers in the Levels dialog work on the same lines, but Set Gray Point is usually the best bet for removing colour casts because it will get you close even if your shot doesn't contain a perfectly neutral midtone, leaving you with less manual adjustment to do. The Black and White Point variants are best for adjusting the tonal range so that blacks are really black and whites true white.

USING THE EYEDROPPERS

If you can find a neutral grey or a pure white, the rest is easy

The Levels eyedroppers will affect contrast as well as colour casts, so if you don't want tone and contrast to be altered, use a Levels adjustment layer and set its blending mode to Color. In Elements you also have the option of Enhance > Adjust Color > Remove Color Cast. In this case the eyedropper works best if you click on an area that should be a pure white, but failing that a colour-neutral grey or even a black area should work. With either tool, if your image doesn't have an area of uniform colour, try setting the eyedropper to sample a larger area than a single pixel: right-click/[Ctrl]-click on the canvas and choose the 3 by 3 or 5 by 5 Average options.



Here we've corrected the image with a couple of clicks of Elements' Remove Color Cast command

Variations/Color Variations

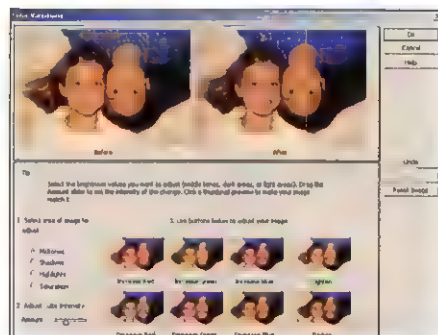
The Variations dialog provides a simple 'before and after' approach to adjusting your colours



Colour wheel clues

The Variations dialog is laid out on the same principle as the colour wheel (visit www.colormatters.com/colortheory.html for an example). Blue and yellow are on opposite sides of the colour wheel, and likewise More Blue and More Yellow are on opposite sides of the Variations display. To get rid of the warm tint in our example shot, we need to reduce the amount of yellow and red, and we can do this by adding cyan and blue.

The Variations dialog looks like a fairly basic colour adjustment tool compared to some others, but it's actually extremely powerful. The interface displays a selection of thumbnails representing different preset adjustments, each previewing how your image will look if you click on it to apply it. In addition to adding and removing colours, you can lighten or darken your image and target adjustments at the image's midtones, shadows or highlights; you can also increase or decrease the image's saturation. In Photoshop go



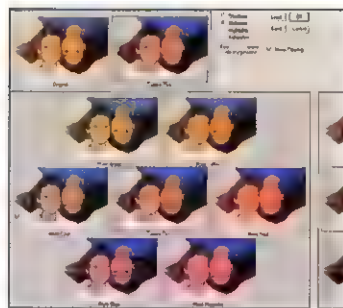
Elements' Color Variations dialog looks a little different from Variations in Photoshop, but they work in the same way

to Image > Adjustments > Variations, and in Elements go to Enhance > Adjust Color > Color Variations.

VARIATIONS IN ACTION

Transform your images by clicking on a couple of thumbnails

If you're using Photoshop, you'll see your original image on the left at the top of the interface, and the 'after' version or Current Pick on the right; it's also displayed in the centre of the lower window, and between the Lighter and Darker previews. Select Midtones, Shadows or Highlights, and click the thumbnails to add or remove a colour or to lighten or darken the image. With Elements' version of the tool you can increase red, green and blue or decrease them, which has the same effect as adding Cyan, Magenta or Yellow respectively. Use the slider (Fine/Coarse in Photoshop, Amount in Elements) to control the strength of the effect.



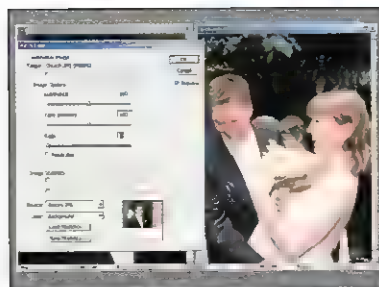
Each thumbnail shows you how your image will look if you select it, making it easy to get the result you want

Match Color

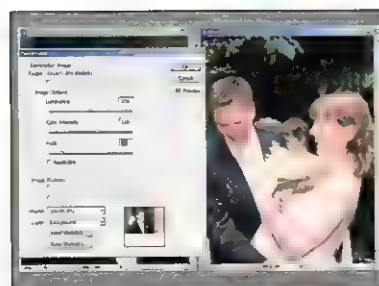
If a sequence of photos look inconsistent, apply the colour values from the best shot to the rest



Begin with two or more photos that were taken at the same time but differ in colour. In this case, our camera was left on auto white balance mode and adjusted itself unexpectedly for the second shot. Since the photos are of the same event, we'd like them to look similar in colour, and if you're using Photoshop you can do this using the Match Color command.



Select the image that you want to adjust – this is the 'destination' image, and the image you're going to use as the basis for the adjustment is the 'source' image. Go to **Image > Adjustments > Match Color**, and select your source image from the Source menu. Photoshop remaps the destination image's colour values to match those of the source image.



Only rarely will the initial adjustment be perfect, although in this case we got pretty close to the result we wanted. We boosted the Color Intensity slightly, and dragged the Fade slider a little to the right for a slightly better match.



Keep both the source and destination photos visible on-screen to help you judge the colour match, and click OK when you're happy. If you have a large number of similar shots to deal with, you can use the **Save Statistics** button to save your settings, and the **Load Statistics** button to apply those settings to other images. You can then tweak them for each shot's requirements.



Matching between layers

This walkthrough shows you how to match colours between two photos, but you can also match colours from a specified layer in the same image, or from a layer in another image, using the **Layer** menu in the **Image Statistics** section of the dialog. Note that the adjustment will be applied to the active layer in the destination image (usually the top layer).



Removing colour casts

You can also use **Match Color** to quickly remove a colour cast from a photo. Open an image and select **None** from the **Source** menu in the **Image Statistics** section. Make sure the **Preview** box is ticked, then tick the **Neutralize** box in the **Image Options** section. The colour cast will be removed, and you can fine-tune the adjustment using the sliders in the **Image Options** section: use the **Luminance** slider to darken or lighten the shot, the **Color Intensity** slider to make the colours more or less intense, and the **Fade** slider to control the strength of the adjustment.

Hue/Saturation

There are other ways to change the colours in an image, and here are two of the most useful



Adjusting skin tones

If a portrait subject's skin tones are a little off, try Elements' Adjust Color for Skin Tone dialog. Click on an area of skin and Elements will adjust the colour in the whole shot accordingly – use the Tan and Blush sliders to fine-tune the result. The Ambient Light slider is a separate adjustment you can use instead of the other two. It's like a white balance control; drag the slider left to make the image cooler (bluer) or right to warm it up.

Digital cameras often produce weaker colours than you might be expecting. One way to intensify the colours is to use Levels or Adjust Color Curves in Elements to maximise the brightness range and add contrast. The other method is to use the Hue/Saturation dialog. This has three sliders: one for Hue, one for Saturation, and one for Lightness. The Hue slider shifts all the colours in the image along the colour spectrum; it can be effective for small colour shifts, but it's not ideal for colour corrections because

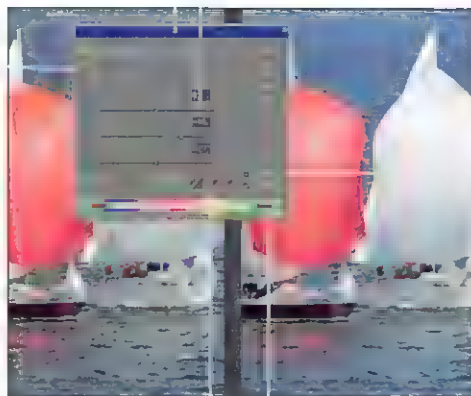
it can produce rather artificial-looking results. The Saturation slider is usually the most useful. Generally, you can increase the saturation to a value of between +30 and +40, but beyond this you'll start to see blotches of colour appearing in the image, some prominent digital noise, and a tendency for brightly-coloured objects to fill in as a solid colour. The Lightness slider is of relatively little use for editing entire images: it increases the brightness, but shadows become weak and grey, and some highlight detail can disappear.

TARGETED HUE/SATURATION ADJUSTMENTS

Hue/Saturation comes into its own when used to adjust a particular range of colours. Go to **Image > Adjustments > Hue/Saturation** in Photoshop, or **Enhance > Adjust Color > Adjust Hue/Saturation** in Elements.

Choose the colour range you want to adjust from the **Edit** menu. We want to boost the colour of the sea without altering the red of the sail, so we target **Blues**, then **Cyans**.

Once you've selected a colour from the **Edit** menu, you can use the eyedroppers to fine-tune the range.



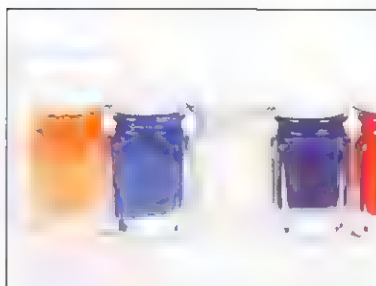
Upping the saturation of the blues improves things a little, but increasing the saturation of the cyans makes a dramatic difference.

You can also use the dialog to tint mono images; click the **Colorize** button, use the **Hue** slider to choose a colour and adjust the other two sliders to suit.

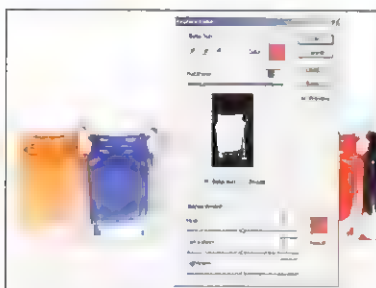
The two inner markers indicate the range of colours selected. The outer markers indicate the 'feathering' range of the colour selection, which helps avoid abrupt and obvious colour changes.

Replacing colours

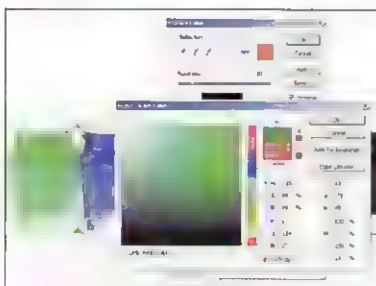
The Replace Color dialog enables you to select a range of tones and change their colour



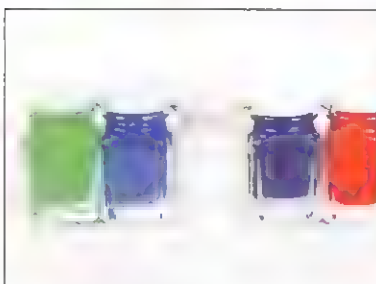
You can use the Replace Color dialog to change the colour of any object in an image while preserving differences in tone. We're going to use it to change the colour of the ink in the pot on the left of this image. We start by drawing a selection with the Rectangular Marquee Tool, to confine our edits to that part of the image.



Go to Image > Adjustments > Replace Color, or Enhance > Adjust Color > Replace Color in Elements. The top half of the dialog is similar to the Color Range dialog (see page 29). Use the eyedropper to make an initial selection, then the Add to Sample eyedropper to add more colours and the Subtract from Sample eyedropper to remove colours if necessary.



Fine-tune your selection with the Fuzziness slider, using the greyscale preview as a guide. When you're happy with your selection, you can choose your replacement colour. Click the lower Result colour swatch to open the Color Picker. You can choose a colour from here, as we've done, or click on a colour anywhere in your image to sample that.



You can fine-tune the colour change using the Hue, Saturation and Lightness sliders in the Replacement section of the dialog – these work in the same way as the Hue/Saturation dialog's sliders on the facing page. You can also use the Fuzziness slider to expand or reduce the range of colours that are changed if you didn't get the selection exactly right initially.



Duplicate layer

You can't exclude pixels that you don't want to recolour from your selection if they fall within the specified range – for example, if you select a blue sky, pixels in a subject's blue jeans may be selected as well. If you're using Photoshop, work on a duplicate layer, then add a mask to this layer and use a brush to remove the new colour from areas you don't want to alter. If you're using Elements, you can use a clipping mask (see page 41).



On target

When you're sampling colours in the main image window, you'll see an eyedropper icon wherever your cursor happens to be. This is quite tricky to use accurately because of the shape of the icon, especially on small areas of colour. Press the [Caps Lock] key to change the eyedropper icon to a more useful crosshairs icon, or go to Preferences and set Other Cursors to Precise. When you have any eyedropper selected, press [Shift] to temporarily switch to Add to Sample mode, or [Alt]/[Option] for Subtract from Sample mode.

The Color Replacement Tool

This tool enables you to replace a specified range of colours by simply brushing over them



Mode options

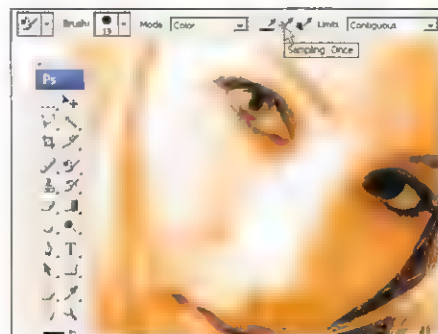
The tool is set to Color mode by default – you can leave it on this setting if you want to change just the colour of an area without affecting its brightness values (but see the sidebars on the facing page). Hue mode leaves the brightness and saturation of underlying colours intact while changing only the hue. Saturation changes only the saturation value, while Luminosity mode changes the brightness but not the colour values.



The Limits options

If you select Discontiguous, all the pixels that fall under your brushstroke and are within the specified range will be replaced, regardless of whether they're adjacent to the sampled pixels under the crosshairs. If you select Contiguous, only pixels within the specified range that are adjacent to the sampled pixels will be replaced, so you may want to press [Caps Lock] to turn your cursor into a crosshairs if you haven't done so in the Preferences. Find Edges is similar to Contiguous but also preserves detail at the edges of the sampled area.

The Color Replacement Tool makes it easy to replace colours in images without creating complex selections or masks, and like the Replace Color dialog it enables you to change the colour of an area while preserving shadow and highlight detail. As you brush the tool over an image, it analyses the underlying colours and changes only those pixels that fall within the specified range by recolouring them using the values of the foreground colour (see page 70). The Tolerance setting dictates the range of colours



You can use the Color Replacement Tool for subtle retouching work or to change the colour of an object, as you'll see on the facing page

that the tool replaces, and the two other important settings are the Limits and Sampling options.

THE SAMPLING OPTIONS

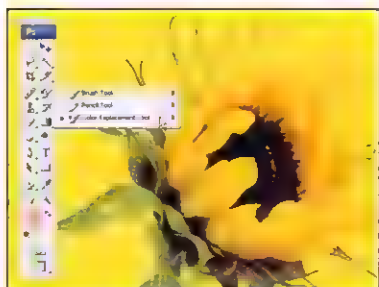
THE SAMPLING options determine which pixels are recoloured and which are left unchanged. If you select Once, only the colour sampled when you first click, and those within the specified tolerance range, will be replaced as you hold down the mouse button and drag, and a new colour will be sampled each time you click.

IF YOU SELECT Continuous, the tool will continuously sample the colour directly beneath the crosshairs as you brush, and replace all of those colours as well as any others that fall under the brush stroke and are within the Tolerance range.

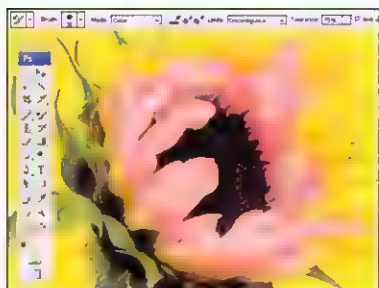
THE RESULTS you get from the two options can vary dramatically, and if you don't use the right settings things can quickly get out of control. Start out using a low Tolerance setting and work on areas of high contrast to get a feel for how that option works.

Replacing colours using brushes

The tool is easy to use and a lot of fun, once you get the hang of the various settings



Changing the colour of this flower would be tricky with the Replace Color dialog because of the similarity in colour between the flower and the background; we need a brush-based tool. Open an image of your own, duplicate the Background layer and select the Color Replacement Tool – it's grouped with the Brush Tool, or with the Healing Brush in Photoshop CS and earlier.



The settings you'll need will depend on what you're doing; we've set Mode to Color, Limits to Discontiguous, Sampling to Once and Tolerance to 75% to fill in large areas away from low-contrast edges. Select a replacement colour by double-clicking the foreground swatch to open the Color Picker, or by [Alt]/[Option]-clicking to sample a colour from your image.



You'll need to zoom in close to work on the edges. If there's a big difference in colour, you can increase the Tolerance, and it won't matter if you brush over background areas. Where the background and subject colour are similar, you'll need to reduce the Tolerance and the brush size. Remember, where you click will define which areas are coloured, so position your cursor carefully.



Keyboard shortcuts are invaluable for this kind of work. Use the zoom and scroll shortcuts covered in Chapter 1, and tap the square bracket keys to decrease and increase the brush size (add [Shift] to adjust the hardness). You can also use the numeric keys to change the Tolerance (1 for 10%, 9 for 90% and 0 for 100%). Use Undo or the History palette to step back if you go wrong.



Luminosity issue

Note that you can effectively replace a colour only with another colour of similar luminosity. Imagine hand-colouring a mono image: if you've got a very dark grey, adding a bright pink to it is going to produce a much deeper shade of pink. The opposite is also true – try adding deep blue to a light grey or white and you'll end up with a lighter blue. If we'd chosen a dark red to colour our flower, the result would still have been pink.



Luminosity solution

There is a way around the above problem, and that's to alter the luminosity of the underlying colour. For each shade you want to change, add a Levels adjustment layer set to Luminosity blending mode, and move the midtones slider left or right until you've achieved the desired shade. Be sure to add a black 'hide all' layer mask (see page 39) and then paint the adjustment back into the desired area only, or in Elements use clipping masks (see page 41).

The Color Picker

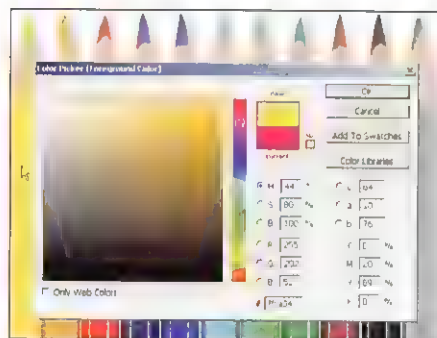
When you need to choose a new colour or change an existing one, use the Color Picker



Colour sampling

Select the Eyedropper Tool (I) and click in your image to set the colour you click on as the foreground colour. This enables you to take a colour from one part of your image to apply elsewhere with any brush or fill tool. Select the Color Sampler Tool from the same toolbox compartment and click to place up to four fixed points in the image, the colour values of which are shown in the Info palette so you can track changes as you adjust the image.

The Color Picker opens when you click any colour swatch – in the toolbox, in the Color palette, or in dialogs such as the Photo Filter or Gradient Editor – or double-click one of the eyedroppers in the Levels or Curves dialog. You can select a new colour in the gradient bar or colour field, or by entering values in various colour modes. For web use, you can enter hex values and tick ‘Only Web Colors’. Your new colour is shown above the current colour. A triangle icon next to it means it can’t be reproduced in CMYK printing; a



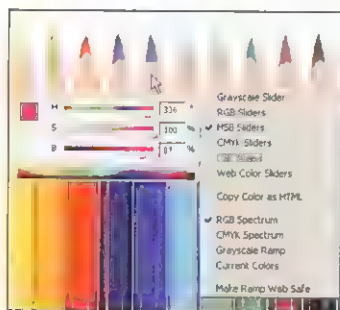
Drag the sliders up and down the central colour ramp or click in it to pick a colour, then click in the colour field to select a shade

cube means it’s not web-safe. Click either icon to shift it to the nearest printable or web-safe colour.

THE COLOR PALETTE AND SWATCHES PALETTE

Create and adjust colours on the fly using sliders or a spectrum

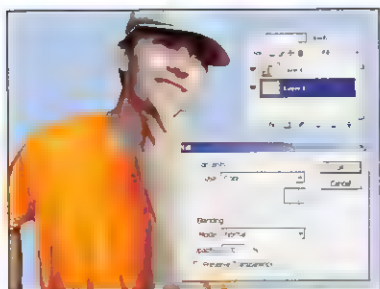
The Color Picker fills the screen and prevents you working on your image. An alternative in Photoshop is the Color palette. Choose a colour mode (usually RGB), then define colours using sliders or numeric values, or click in the spectrum to pick up a colour – black and white are at the right. You can also set the foreground and background colours by clicking the foreground and background swatches. You can store new colours in the Swatches palette: simply click an empty square to add the current foreground colour. To use it later, click or [Ctrl]/[Command]-click on a swatch in the palette to make it the foreground or background colour respectively.



You can choose between colour modes from the palette menu or by (Shift)-clicking in the spectrum bar

More colour tools

Here's a quick round-up of some other tools that you can use to select and apply colours

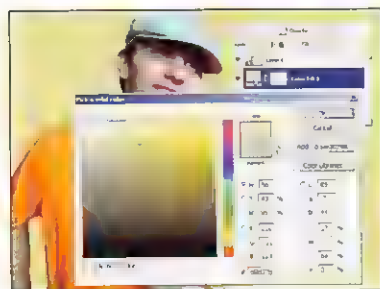


To quickly fill a selection or an entire layer with a solid colour, go to **Edit > Fill**. Choose an option from the Use menu; select **Color** if you want to choose a colour with the Color Picker. You can also fill a layer or selection with a pattern, and fill a layer with information from a saved History State. In the Blending section you can choose a blending mode and opacity for the fill.



Unlocking the Background layer

In step 1 we're using the **Edit > Fill** command and in step 2 a **Solid Color** adjustment layer to create a studio-style backdrop for a subject we've cut out from another image. In order to place a new layer below your Background layer, you'll need to unlock the Background layer first by double-clicking it and okaying the New Layer dialog. The layer will be renamed **Layer 0** by default

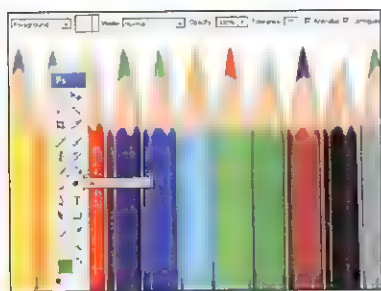


You can also apply a fill as a fill layer, a type of adjustment layer. Click the 'Add fill or adjustment layer' icon in the Layers palette and select **Solid Color**. The layer will be filled with the foreground colour; change this using the Color Picker. You can change the opacity or blending mode of the fill at any time using the Layers palette controls, or the colour by clicking the layer icon.



Sampling colours

When you're using any painting tool, you can hold down **[Alt]/[Option]** to switch to the Eyedropper Tool and click to sample a colour to paint with – this is what we did in step 3 to recolour the tips of the pencils with the Paint Bucket Tool, and it's also very useful when you're retouching photos. You'll also have an eyedropper at your disposal when the Color Picker is open, and when you select commands such as **Replace Color** or **Color Range**. In all these cases, clicking on a colour in the image sets that colour as the foreground colour in the toolbox.



The **Paint Bucket Tool** is like a **Fill** command combined with the **Magic Wand Tool**: it applies the foreground colour to pixels of a colour similar to the one you click on, based on its Tolerance setting. Also like the **Magic Wand**, it has a **Contiguous** option. Here we recoloured the tips of the pencils by sampling one pencil colour (see sidebar), then clicking on the tip of another.



The **Edit > Stroke** command enables you to quickly add a coloured border to a selection, layer or whole image. Go to **Select > All** to select the layer, then go to **Edit > Stroke** and set **Location** to **Inside**. Enter a width in pixels, and click the colour swatch to choose a colour – here we moved the Color Picker aside and sampled a green from the image using the eyedropper.

Gradients

Apply smoothly-blended colour gradients to images, selections, layers and masks



Masking the gradient

When you're creating this kind of effect, you'll want to remove some or all of the gradient colour from foreground objects to help the effect look realistic – in our case the foreground grass and subject would pick up a little of the sky colour, but not as much as is in the sky itself. You can use the Eraser Tool, as we have here, or add a layer mask to the gradient layer in Photoshop, or create a clipping mask in Elements.

You can use the Gradient Tool to create a colour gradient that transitions between two or more colours, or between a colour and transparency. To draw a gradient you simply click and drag on the canvas: the gradient will fill the canvas, or a selection if you have one active, and the length of the line you draw determines whether the colours are blended gently or more abruptly. You can choose from five styles – Linear is the most useful – and select one of the preset colour combinations or create your own. You can also use a



A popular use for gradients is to create 'grad filter' effects that change the colour of a sky – see below for how we created this effect

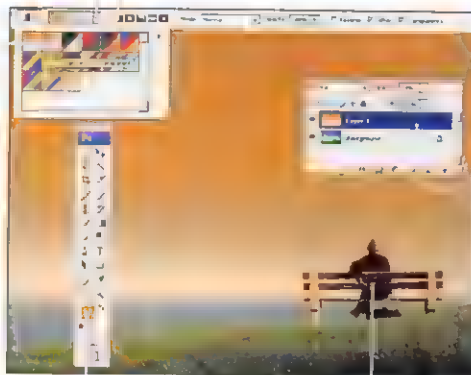
black-to-white gradient on a layer mask to hide or reveal adjustments – for example to graduate a blur effect.

CREATING A GRAD FILTER EFFECT

Select the Gradient Tool (G), then click the arrow next to the preview to see the preset gradients, or click on the preview itself to open the Gradient Editor.

The Foreground to Transparent preset in the Gradient picker displays our chosen foreground colour.

Before opening the Gradient picker we chose an orange foreground colour using the Color Picker; you could alternatively create a polarising filter effect by choosing a dark blue colour.



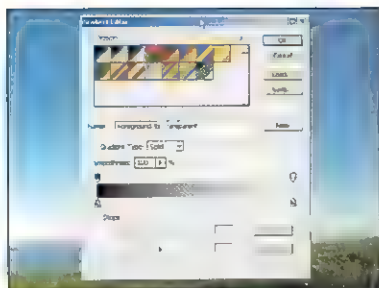
We chose the Linear style for a simple blend between the foreground colour and transparency. If your gradient contains transparency, make sure the Transparency option in the options bar is enabled.

We drew the gradient in a new layer so we could try varying opacity and blending modes, which we couldn't do if we drew the gradient directly on the image layer.

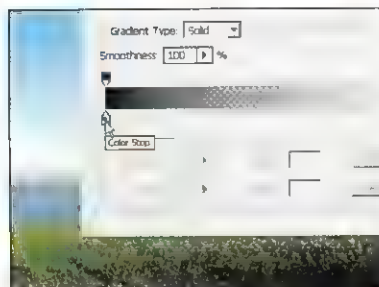
We used the Eraser Tool set to a medium opacity to remove some of the gradient colour from the foreground subject and grass.

Editing gradients

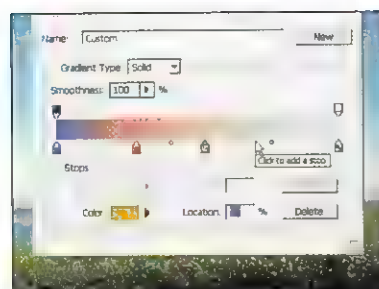
If one of the preset colour effects doesn't suit your needs, here's how to create your own



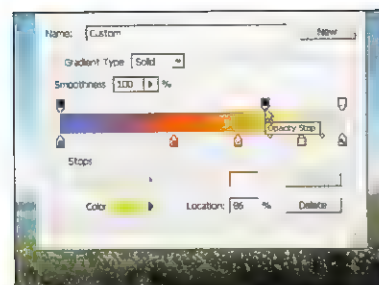
Select the Gradient Tool, and click the gradient preview in the options bar to open the Gradient Editor (clicking the arrow next to it just displays the presets). Select the gradient you wish to edit by clicking it. We're starting with the Foreground to Transparent preset, and we're going to create a 'sunset' effect that runs from purple via red, orange and yellow to transparent.



To change the colour of a stop, select it and click on the Color swatch in the Stops section at the bottom of the dialog to open the Color Picker; alternatively, double-click on a stop to open the Color Picker. Click once on the bottom edge of the gradient bar to add a new colour stop.



The new stop will take the current foreground colour, and you can change this as you did for the first stop. Drag the stop left or right to change the gradient's appearance. Between each pair of colour stops is a diamond icon; drag this to change the midpoint of the colour transition between the stops.



Click on the top edge of the gradient bar to add an opacity stop. With an opacity stop selected, you can make it fully or partially transparent by clicking the arrow and dragging the pop-up slider, clicking and dragging on the word Opacity, or typing a value. To add your new gradient to the presets, give it a name and click New – the original gradient you edited isn't changed.



Resetting gradients

If your gradient editing goes awry, hold down the [Alt]/[Option] key to turn the Cancel button in the Gradient Editor into a Reset button. Clicking Reset causes the gradient that you're editing to revert to a basic Foreground to Background gradient.



Noise gradients

The Gradient Type pop-up contains two options: Solid and Noise. You'll generally want to use solid gradients for photo enhancements such as the grad filter effect. Noise gradients are made up of multiple colour stops which produce random patterns of thin colour strands. You can use the Color Model sliders and the Randomize button to generate an infinite variety of noise gradients – they're great for creating the effect of light rays shining through clouds or a forest canopy.

Special effects

Here are four fun colour-bending commands that you can use to transform your images



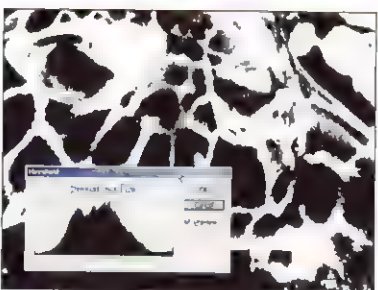
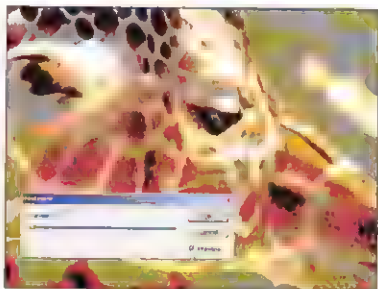
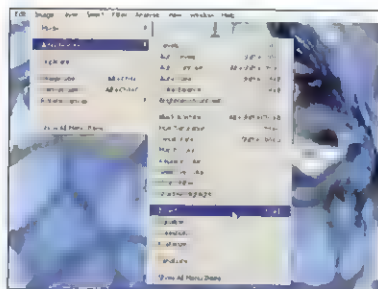
Adjustment layers

All of the effects featured on this page can be applied as adjustment layers, and it's a good idea to do so – you can quickly run out of History states when you start playing around with these options, and you may find that you can't get your original image information back. Using adjustment layers also means you can go back and change the settings for a particular effect at any time.



Selective Color

Commercial CMYK printing can't produce as wide a range of colours as your monitor. In the past, scanner operators could adjust 'out-of-gamut' pixels in digital scans by applying selective colour shifts to affected primaries to bring them into the printable CMYK range. You can do the same in Photoshop using Image > Adjustments > Selective Color. The image needn't be CMYK, but the controls are CMYK-based. It's rarely needed, but you can use it to shift colours – if you choose Greens, say, dragging the Yellow slider to the left will change green areas to blue.



You'll find all these effects under Photoshop's Image > Adjustments menu, or the Filter > Adjustments menu in Elements. First up is Invert, which simply inverts the colours in your image to create a negative effect. You can also use it to generate images from scanned black-and-white negatives, but note that it doesn't work effectively for colour negatives.

The Posterize command creates an image made up of areas of flat colour. Use the slider to set the number of levels, but note that this value is the number of brightness levels for each colour channel, not the number of colours in the image. So, choosing four levels for an RGB image will generate 12 colours – four each for the red, green and blue channels.

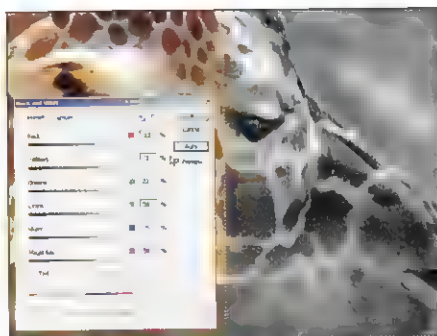
The Threshold command creates a striking, simplified black-and-white image. The default threshold value is 128, or midway between 0 and 255 on the RGB brightness scale; all pixels lighter than this value will be converted to white, and all pixels darker than the threshold value are converted to black.

The Gradient Map command remaps the greyscale values of an image's pixels to the colours of the gradient fill you specify. A two-colour gradient will produce a two-tone image, while more complex gradients will produce multi-coloured results. You can customise the effect by editing the gradient as shown on the previous page – your image will update as you make changes.

Black-and-white conversions

Turn your colour photos into stunning mono images using simple but powerful tools

The easy way to remove colour from a photo is to use the Desaturate command in Photoshop or Remove Color in Elements, but these simply turn down the colour saturation and the results are usually disappointing. The most effective colour-to-mono conversion tools are those that enable you to adjust the brightness levels of the individual colour channels that make up an image. Photoshop's Channel Mixer (page 77) enables you to do this, as does Elements' Convert to Black and White dialog. CS3 has an even



Since this subject has mostly orange tones, adjusting the Reds and Yellows sliders in CS3's Black and White dialog has a dramatic effect

more powerful variant on this theme: the Black and White dialog, which we'll look at over the page.



Colours and channels

The effects of the various sliders in CS3's Black and White dialog depend on which colours are predominant in an image, and the same is true of the Channel Mixer sliders and the Convert to Black and White thumbnails. An orange tone, for example, might have RGB values of Red 200, Green 150 and Blue 100, so the red slider (and the yellow in CS3's tool) will lighten or darken the image more than the others.

MONO CONVERSION IN ELEMENTS

Create striking black-and-white images with a couple of clicks

Elements' Convert to Black and White dialog isn't as powerful as Photoshop's Channel Mixer or CS3's Black and White command, but it does enable you to create custom mono conversions by manipulating channel information. Go to Enhance > Convert to Black and White: a default adjustment will be applied, which you can fine-tune by dragging the Red, Green and Blue sliders in Elements 6, or by clicking the Red, Green and Blue thumbnails in Elements 5, and by adjusting the contrast. You can also choose from a list of preset black-and-white 'styles' such as Portraits and Vivid Landscapes, and again fine-tune the effect with the sliders.



The Convert to Black and White dialog previews your converted image alongside the original

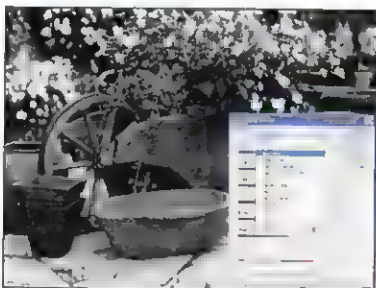
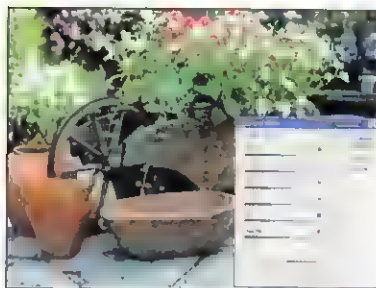
CS3's Black and White command

This CS3 tool enables you to convert colour to mono with an unrivalled degree of precision



Target a tone

As an alternative to using the sliders, you can adjust a photo by clicking on a tone that you want to target in the main image window; the swatch representing the dominant colour in that area will be highlighted in the dialog, and dragging left or right will have the same effect as adjusting that slider. This is a handy way of getting a feel for how the conversion process works.



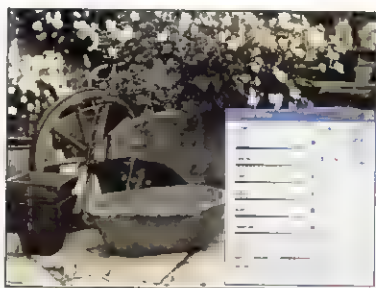
Each slider controls the greyscale brightness level of that colour. It can help to think of Reds, Greens and Blues as one group and Yellows, Magentas and Cyans as another – it's often easier to work with one or the other. Toggle the Preview on and off to compare the colour and mono images, and think about which tones you want to bring out in the monochrome mix.

The easiest way to get started is to click through the presets. You'll find very different looks and styles here, and they'll give you an idea of what this tool is capable of. You'll see that the slider settings change as you select each preset; it's not always obvious how each colour contributes to the result, so try the presets on a few different photos to get a feel for how the tool works.



Custom presets

If you hit on a particularly effective combination of settings for a particular subject – for example a high-contrast mono portrait effect – you can save the settings so that you can apply them to similar images. Click the button to the right of the Preset menu, choose **Save Preset** and give it a name. Your new preset will now appear below the default options in the menu.



The simplest way to create a custom effect is to step through the sliders turning one to 0 and the others to 100%, leaving just that one colour in the mix. When you find an effect that you like, try adding some of the other colours to fine-tune it. Negative percentages can create a punchier effect, but take care not to create halos around high-contrast edges.

When you're happy with an effect, you can optionally add an overall tint by ticking the Tint box. The default is a sepia effect, but you can change the colour with the Hue slider. For a natural-looking effect, keep the saturation below around 20%, and below 10% for very subtle tints. Note that you can apply your Black and White effect as an adjustment layer, which is recommended.

The Channel Mixer

Produce high-quality greyscale images by combining channel data in precise amounts

You can use Photoshop's Channel Mixer command to create zany colour effects and to remove colour casts (with a fair bit of trial and error), but it's intended primarily as a means of desaturating a colour image in a controlled fashion. It's not as sophisticated as CS3's Black and White dialog, but it comes pretty close. When you create a greyscale image by desaturating a colour photo, a mono version is produced using the composite RGB values for each pixel, and the Channel Mixer, like the other tools

we've looked at, enables you to adjust the balance of the individual channels for each pixel. As a rule, the green channel of an RGB image tends to contain the greatest amount of detail that the eye can distinguish, while the red channel has the least. The blue channel contains much of the contrast information – so, for example, you could increase the percentage in the blue channel (or cyan in the case of a CMYK image) of an outdoor photo to ensure that your black-and-white image contains plenty of contrast in a cloudy sky.



Calculations

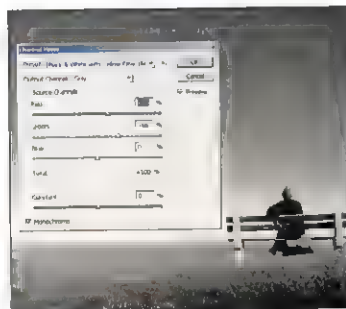
Photoshop's Calculations dialog (in the Image menu) is designed for blending channels between images, but if you ignore the Source and Layer menus and focus on the Channel menu, you can use it as another way to create a custom mono mix.

The bonus it offers is its blending mode and opacity options: Overlay, for example, creates a much brighter and more contrasty conversion, and Multiply a more intense effect.

USING THE CHANNEL MIXER

Adjust the sliders to create striking custom mono conversions

Select Channel Mixer from the Image > Adjustments menu, and tick the Monochrome option at the foot of the dialog to apply an initial black-and-white conversion. If you want to base the greyscale effect on a particular channel, you can select that channel from the Output Channel menu before ticking the Monochrome option, although all this does is set that channel to 100%. Drag the sliders for one or more channels to create a custom greyscale effect. For the best results, try to ensure that the total percentage value of a 1 three channels (or four in the case of CMYK) is around 100. Use the Constant slider to brighten or darken the image.



In addition to the sliders, the Channel Mixer dialog in CS3 includes a menu containing preset filter effects

RETOUCHING AND IMAGE ENHANCEMENT

The powerful tools in Photoshop and Elements enable you to do everything from eliminating the smallest blemishes in shots to removing an entire person, or even building a tower block!

In the last couple of chapters we looked at tools and options for adjusting tone, exposure and colour. In this chapter we turn to retouching – the art of eliminating blemishes, removing unwanted objects and generally improving on nature (or at least that flawed part of nature we were able to capture with a camera).

Photoshop and Elements' tools for retouching fall into three broad categories. The first category are the cloning tools (including the 'healing' tools, which perform the impressive additional trick of blending cloned pixels into their new settings). The second group are the 'darkroom' tools (mostly brush-based tools such

as Dodge, Burn and Sponge, but for our purposes also the various tools for fixing red-eye). And finally there's a grab-bag of other tools for generally moving pixels around, rotating, stretching or bending them, or combining them in various ways.

Cloning and healing

The cloning tools are among the most powerful in the toolbox, and the most fun to use. They all work on the principle of 'picking up' pixels from one part of an image and laying down copies of them elsewhere. The Clone Stamp and the Healing brushes can sample from different layers of an image, or even

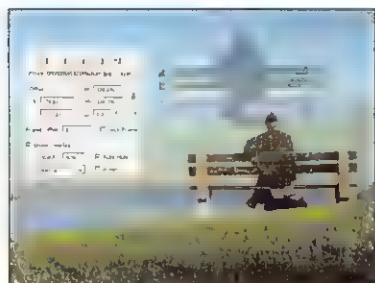
Using the Clone Stamp and Healing tools

perspective with CS2/3's Vanishing Point filter

adjust sharpness and exposure selectively

and transition between photos

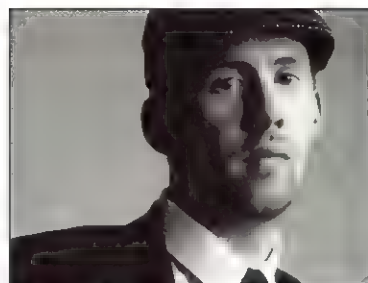
retouching features in CS3 and Elements 6



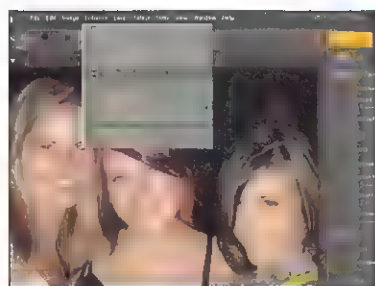
Page 81 New preview and transform options make precise cloning easier



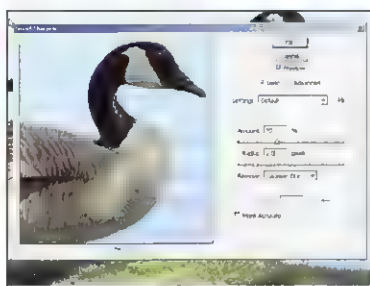
Page 85 CS3's version of Vanishing Point includes powerful new features



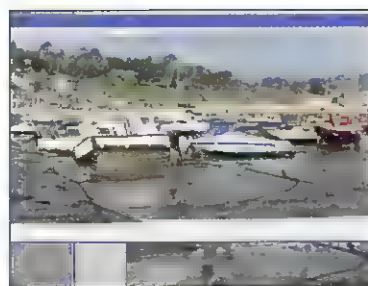
Page 86 Adjust exposure selectively using the Dodge and Burn tools



Page 88 Remove red-eye from images manually, or use automated options



Page 93 Use the Smart Sharpen filter to give your images added 'bite'



Page 96 Creating panoramas is easier than ever in CS3 and Elements 6

from separate files – simply [Alt]/[Option]-click in one file to set the sample point, then go to another and paint in pixels from the first image.

Using layers

The Clone Stamp and the Healing tools also have a 'Use All Layers' option (or 'Sample All Layers' – the term varies from tool to tool and from version to version). When this is enabled, the tools can not only sample information from multiple layers in an image, but can paint on a new blank layer rather than directly onto your image. This means they work non-destructively, and you can use layer features such as opacity

and blending modes (and masks in Photoshop) to adjust their effects.

The Patch Tool lacks the ability to use layers, but it does have one trick up its sleeve. It's part cloning tool and part selection tool – you draw a selection area with it like a Lasso – and because it's part selection tool, it can be combined with other such tools. You can use any selection tool (or combination of them) to create your selection, *then* switch to the Patch Tool. Or draw your patch, then use other selection tools and options to modify it – add to it, scale it with the Transform commands (page 91), or feather the selection edges for an even more subtly blended repair.

The Clone Stamp Tool

Remove anything from a blemish to an entire person, or duplicate objects within an image



The right brush

Configure the Clone Stamp brush to suit the job you're doing. Where you want a soft blend between pixels, such as in the sky in the image below, you can use a soft-edged brush, and optionally reduce its opacity. Where you're working on detailed areas and well-defined edges, you'll need to switch to a hard-edged brush. Right-click/[Ctrl]-click the canvas to access the brush options, or use the keyboard shortcuts.

The Clone Stamp Tool samples pixels from one part of an image and duplicates them into another. It's ideal for removing unwanted objects from images or for close-up retouching work in areas where the blending properties of the Healing tools (overleaf) would blur detail. The tool is simple to use in theory – [Alt]/[Option]-click on the point from where you want to begin sampling pixels, then click and drag to 'paint' those pixels over the target area – but it takes a little getting used to. To avoid creating repeating

patterns that will betray your work, use short strokes and resample regularly. You also need to make sure that your sample point doesn't 'catch up' with the point from where you started cloning – if it does, you'll see pixels that you've just cloned over reappearing in another part of your image. You can use the tool on a new layer with the Sample option set to 'All Layers' or 'Current and Below' (or 'Use All Layers' in earlier versions) to clone non-destructively onto the new layer, then blend this layer with the image layers beneath.

CLONING TIPS

Use Aligned mode to clone pixels parallel to your brush strokes

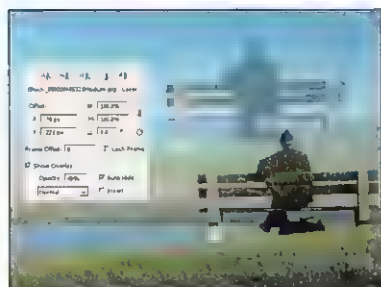
You'll want to stick to Aligned mode for most cloning jobs. In either mode, you first [Alt]/[Option]-click to define a sample point, then click and drag to lay down the sampled pixels. In Aligned mode, the tool will begin sampling from a *new* point each time you click and drag, with each new sample point at the same relative position and distance as the first was from the point where you started painting. It does this even if you release the mouse button while cloning, to change the brush or zoom in, say. If you disable Aligned, the tool samples from the *original* sample point *every time* you click and drag, until you [Alt]/[Option]-click again to define a new sample point.




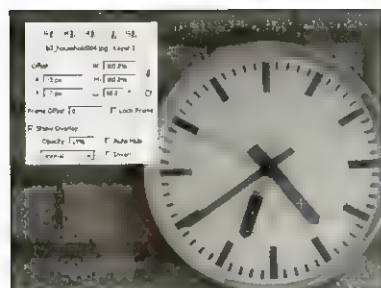
Keep a close eye on the sample point (on the left here) so that you know which pixels are about to be cloned


Clone Source palette/Overlay

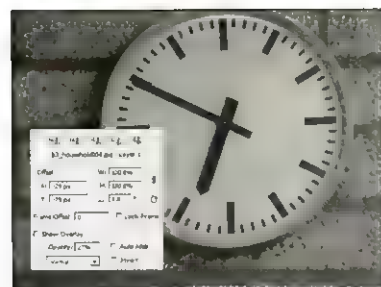
The Clone Stamp Tool has been improved with powerful new features in CS3 and Elements 6




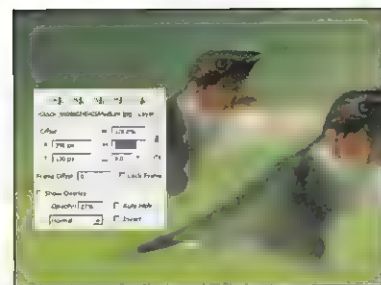
 **CS3's new Clone Source palette includes a Show Overlay option, which you'll find in the options bar in Elements 6. When you've define a sample point, a copy of your image will be superimposed on the original, and you can use this to help you align your cloned pixels. You can change the opacity of the overlay, invert it, and set it to switch off when you click to begin cloning.**




 **The Clone Source palette also enables you to rotate the clone source by clicking and dragging on the angle icon or typing a value in the field. Here we're going to change the time on the clock by clicking in the dead centre of the face and entering an angle value of 60%. The entire preview is rotated, and using the overlay as a guide we can carefully clone just the hands.**



 **We click the icon to the left of the angle box to clear the transform fields, hide the overlay and use the Clone Stamp in the conventional way to remove the original hands, then tidy up around the edges of the cloned hands. As with all retouching work, using the zoom, scroll and brush shortcuts we've already mentioned will enable you to work faster and with greater precision.**



 **You can rescale your cloned pixels by entering a value in either the height or width field; the proportions are constrained by default. If you switch on the overlay, you can quickly 'fill in' the outline of the object you're cloning before you turn to working more carefully around the edges – you can tidy up afterwards with the Eraser Tool or a mask if necessary, as we've done here.**



Precision cloning

You can use the Clone Stamp Tool to sample pixels from one layer in an image and clone them in another, and you can even clone pixels between images. You can also choose a blending mode for the tool in the options bar – mostly you'll use it in Normal mode, but Lighten or Darken modes can be useful for subtle retouching, enabling you to limit the amount of detail you alter and target just the problem tones.



New in CS3

Along the top of CS3's Clone Source palette are five source thumbnails; use these to store multiple sample points for easy access later, which is useful if you're working on complex, multi-layered projects or between images. Also, instead of a Sample All Layers option there's a Sample menu with three options: Current Layer, 'Current & Below' and All Layers. The icon to the right of the menu enables you to ignore adjustment layer information when cloning – in previous versions you had to hide adjustment layers to prevent problems when sampling all layers.

The Healing tools

Remove minor blemishes seamlessly, without destroying smooth tonal gradation and texture



Healing and edges

If a blemish is close to areas of obviously differing tone such as the edges of a face, you won't get good results, because the Healing tools will include these differing tones in their calculations and blur the detail. Switch to the Clone Stamp Tool, or make a selection around your blemish that excludes the differing tones but includes enough clean tone and texture to enable the tool to work its magic.

There are three Healing tools: the Healing Brush, the Patch Tool (Photoshop only) and the Spot Healing Brush (available in Elements and CS2/3). All three are ideal for subtler retouching work because they not only replace original pixels with cloned ones, they also use complex calculations to blend the cloned pixels into their new surroundings. The Healing Brush and Spot Healing Brush are ideal for removing small blemishes such as sensor dust and spots on skin, while the Patch Tool excels at quickly removing multiple

blemishes from large areas of even tone. The Spot Healing Brush is usually the best choice for dealing with small blemishes, but do try the Healing Brush if it doesn't do the trick; both are best used with hard-edged brushes (though if the blend isn't perfect, undo and try a softer brush; this makes the tool take more account of the surrounding colour and shading). In CS3 the Clone Source palette (see previous page) works with the Healing Brush; and in Elements 6 the Overlay settings are available in the options bar.

USING THE HEALING TOOLS

Here's a quick guide to using the blemish-bashing trio

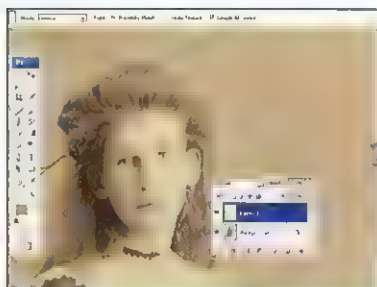
The Spot Healing Brush is easy to use: one click and the mark is gone. The trick is to choose a brush large enough to cover the blemish. To use the Healing Brush, [Alt]/[Option]-click to sample 'clean' pixels that will be used to hide the blemish; it works best with the Aligned option disabled, and can be used for areas that the Spot Healing Brush isn't able to fix. You can use the Patch Tool in one of two ways. If you select Source in the options bar, you can draw a patch around a large blemish, and then drag this over an area of clean pixels; if you select Destination, you'll need to select a patch of clean pixels and drag this over the area you want to patch.



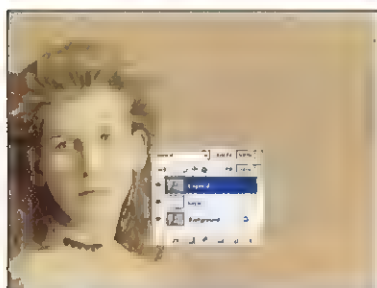
We'll demonstrate the Healing tools on the facing page by using them to restore this damaged old portrait

Healing and patching

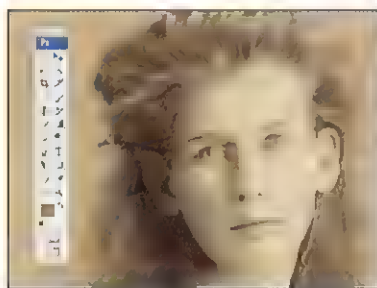
We'll combine the Healing brushes, the Patch Tool and the Clone Stamp to restore this image



1 We'll start by quickly removing the blemishes above and to the right of the subject using the Spot Healing Brush. Create a blank new layer and enable the Sample All Layers option. Use the right square bracket key to resize your brush, making it slightly bigger than each mark you target, and simply click once to remove spots, or click and drag to remove larger marks.



2 When you've cleaned up a large enough area you can use the Patch Tool to quickly repair more of the background. Merge your two layers into a new layer (see sidebar 2), select an area of clean pixels with the Polygonal Lasso (see sidebar 1), then select the Patch Tool. Select Destination in the options bar, click inside the patch and drag the clean pixels over a blemish.



3 To remove the blemishes on and near the hair and face, zoom in close and switch between the Spot Healing Brush for small marks and the Healing Brush where you need clean skin tones – for example to remove the stain around the subject's right eye. To work on the eye itself and on the hair, switch to the Clone Stamp Tool so that you don't blur detail.



4 In some cases you won't be able to repair areas of missing detail with any of the retouching tools, so you'll have to try to recreate it with brushes, holding down [Alt]/[Option] to sample suitable colours from your image. If you can get things looking pretty close when you're zoomed in, you should find when you zoom out that your image looks just about flawless



Creating a patch

Note that in step 2 we create our patch with the Rectangular Marquee Tool before switching to the Patch Tool. You can create a patch from a selection made with any selection tool, or create the patch with the Patch Tool itself – by default it works like the Lasso Tool, and if you hold down [Alt]/[Option] it works like the Polygonal Lasso Tool



Merging layers

The Patch Tool doesn't have a Sample All Layers option, so if you want to create a patch using pixels from more than one layer, as in step 2, you'll need to create a new layer containing information from all the required layers. To do this, make those layers visible (hide any others), then go to the Layers palette, hold down [Alt]/[Option] and select Merge Visible from the palette menu. If you're working on a multi-layered image, it can be helpful to create a new merged layer every so often to save you having to work out which pixels are on which layer.

Cloning in perspective

With CS2/3's Vanishing Point filter, cloned pixels will match the perspective of their new setting



Yellow and red grids

When you complete your grid in step 1, it should turn blue. If, after you've drawn your grid, it turns yellow or red instead, it means you haven't defined a plausible perspective plane. You'll need to click and drag one of the corner handles to adjust the perspective; when you hit the mark, the grid will turn blue.



Imperfect perspectives

Lens distortions mean that an image is unlikely to contain perfectly geometric perspectives, and if you're cloning over large areas you'll probably find that the scale of your cloned pixels starts to look a little off as you move further away from your source point. In the case of an image such as the one on the facing page, you'll get better results if you use the Clone Stamp Tool to clone pixels horizontally before switching to Vanishing Point to clone along the vertical perspective.



1 Create a new layer and go to **Filter > Vanishing Point**. The **Create Plane Tool** should be selected by default – if it isn't, press **C** to select it. Click and drag along a perspective line, then click and drag to draw a second line perpendicular to the first. Draw up or down until you hit another perspective line, draw along this, and draw a second vertical line to complete the plane.

2 Zoom out if necessary so you have plenty of room around your image, and click and drag the handles to expand the grid to encompass the areas you want to clone from and to. If you want to draw a second plane, hold down **[Ctrl]/[Command]** and click and drag a side handle from your first plane in the required direction.

3 Select the **Stamp Tool (S)**, the filter's version of the **Clone Stamp**, and press **[Alt]/[Option]** to sample your source pixels. You'll see a floating preview of the sampled pixels, which will be scaled up and down as you move around the image. Click and drag to spray the pixels. Sample new areas as necessary, and use the square bracket keys to resize your brush as you work.

4 You can set **Heal to On** if you want to blend your source information with the destination pixels for a **Healing Brush** effect. To finish off this image, we decided we ought to clean up the tell-tale repeated woodgrain marks, so we added a new layer and cloned them out with the **Clone Stamp Tool**.

Vanishing Point in CS3

Photoshop's amazing perspective cloning tool has got even more powerful in CS3

The Vanishing Point filter, which enables you to clone or copy-and-paste pixels that automatically match the perspective of an image, was a powerful addition to CS2, and some new features have been added in CS3. Most usefully, you can drag a new perspective plane from an existing plane at angles other than 90 degrees, which means you can create complex arrangements of planes. You can also clone or paste image data across more than one plane surface at a time, or you can confine your cloning to the selected



Click and drag a plane's side handles to extend it, or [Ctrl]/[Command]-click a side handle to drag out a new plane

plane, which means you don't have to zoom in close and use a small brush to clone along edges.



Multiple perspectives

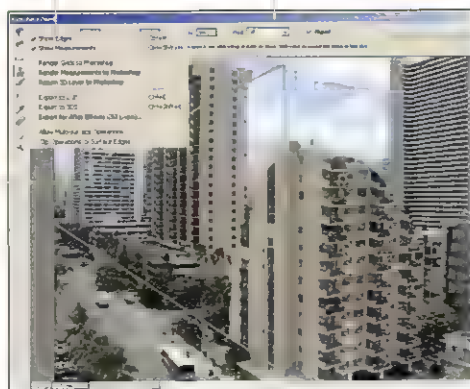
Note that a linked multi-plane surface can contain only two perspectives. If you want to create a plane with a perspective that doesn't match that of your other planes, you'll need to create a new plane using the Create Plane Tool, and you won't be able to include this plane in multi-plane cloning or pasting operations.

VANISHING POINT IN CS3

Enable the Show Edges option to see the edges of all your planes – you can show and hide the edges while you're working by pressing [Ctrl]/[Command]+H.

The clip Operations to Surface Edges option is another useful addition in CS3 – when this is enabled, your cloning will be confined to the active plane.

Select Allow Multi-Surface Operations in CS3 to clone or paste over multiple planes in one operation.



When you're using the Stamp Tool, you can enable the Heal option to blend cloned pixels with their surroundings; leave this off when you're cloning areas of detail, as we are here.

When you select a tool, you'll see brief instructions for using it here.

After you've drawn two planes, you won't be able to adjust the perspective of another linked plane by dragging a corner handle; you can only use the Angle slider to alter the angle between the planes.

The Dodge and Burn tools

Use these 'darkroom' tools to brush localised exposure adjustments onto your images



Highlights and shadows

The Dodge and Burn tools should be used sparingly on highlight and shadow areas respectively – even at a low Exposure setting, dodging can easily bleach out highlights, and burning can darken shadows almost to black. When you're burning highlights or dodging shadows, be sure to use the appropriate Range setting. If a sky is a pale blue, for example, darken it using the Burn Tool set to Highlights.



Gently does it

Note that even at high Exposure settings the full lightening or darkening effect isn't applied in a single brush stroke – you'll need to go over an area a few times without releasing the mouse button to build up the effect. Having done this, if you want to dodge or burn an area even further you'll need to release the mouse button and then reapply the tool.

When you apply a tonal adjustment such as Levels or Shadow/Highlight (see Chapter 4), the adjustment will affect your entire shot unless you've made a selection first. Sometimes, however, you want to lighten or darken a shot selectively to bring out or suppress detail in certain areas. You could apply your changes as an adjustment layer and use a mask, or the Dodge and Burn tools enable you to do this by brushing over areas – the Dodge Tool lightens and the Burn Tool darkens. The tools are named after



You can use the Dodge and Burn tools to create striking black-and-white images by lightening highlight areas and darkening shadows

traditional darkroom processes, and they're grouped with the Sponge Tool (see facing page).

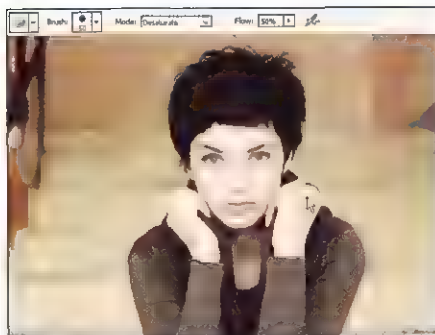
DODGE AND BURN OPTIONS

- **AS WITH OTHER** retouching tools, it's best to use the Dodge and Burn tools on a duplicate layer, or select the area you want to work on and float this to a new layer using [Ctrl]/[Command]+J.
- **THE RANGE SETTING** for both tools enables you to target your edits at an image's shadows, highlights or midtones. It's a good idea to work on the midtones initially, since this will often produce the desired results.
- **THE EXPOSURE SLIDER** controls the intensity of the dodging or burning effect. It's generally best to start out with a low value and build up the lightening or darkening effect gradually – if you start with a high setting it's very easy to overdo things.
- **YOU CAN ADJUST** the size and hardness of the brush to suit the area you're working on – a soft-edged brush will help you to create a subtler transition between edited and unedited areas.

The Sponge Tool

You can use the Sponge Tool to saturate or desaturate colours in specific areas of a photo

The Sponge Tool enables you to selectively increase or decrease the saturation of colours in a photo. You might, for example, want to boost the colours of some flowers without affecting the saturation of colours elsewhere in the shot; or conversely, you may want to slightly desaturate a colourful background element so that it doesn't draw the viewer's eye away from a foreground subject. Choose Desaturate or Saturate from the Mode menu, and use the Flow slider to control the rate at which colour is added or



The Sponge Tool enables you to make localised saturation adjustments without having to create selections and masks

removed – it's generally best to start with a low setting and build up the effect you want gradually.



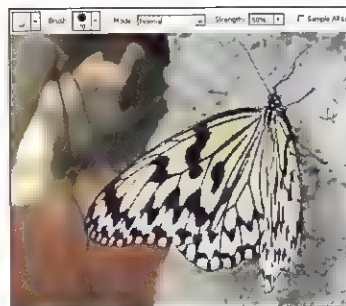
Fast desaturate

If you want to selectively colour just a small part of an image while leaving the rest black and white, it's quicker to desaturate the entire image using a Hue/Saturation or Channel Mixer adjustment layer, then paint colour back in using a black brush on the layer mask. If you want to make a specific object black and white and leave the rest of the image in colour, invert the layer mask, then paint over the object with a white brush.

THE BLUR, SHARPEN AND SMUDGE TOOLS

Selectively blur or sharpen pixels to change the focus of a shot

The Blur and Sharpen tools enable you to alter the sharpness of an area by brushing over it. Both tools can be used on a new or duplicate layer with Sample All Layers enabled, and you can dictate which pixels are blurred or sharpened based on their colour or brightness values by choosing a blending mode – for example, you can use the Blur Tool set to Darken mode to tone down reflective highlights on a subject's face without affecting darker skin tones. Grouped with these tools is the Smudge Tool, although it's more of an art tool than an photo editing one – it simulates the effect you get when you drag a finger through wet paint.



The Blur and Sharpen tools can be used to create macro effects that would be hard to create in-camera

Fixing red-eye

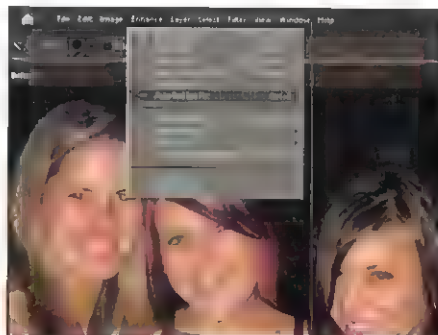
Red-eye is a common problem in flash-lit shots, but you can remove it from images in seconds



Auto limitations

If eyes contain strong reds, Elements' Auto options will usually do a good job, but if the red-eye is less obvious or the eye contains dark reds or purples, you may find they have little effect. The tools described below can also be a bit hit-and-miss in such cases. This is less of an issue with group shots, but for a close-up portrait you may get better results using the Color Replacement Tool, or by painting out the red with the Brush Tool.

There are several options for removing red-eye from photos in Elements. If you import photos using the Adobe Photo Downloader, you can enable the Automatically Fix Red Eyes option in the Advanced Options section of the interface. Alternatively, you can select photos that contain red-eye in the Organizer and go to Edit > Auto Red Eye Fix. There are also Auto Red Eye fix options under the Enhance menu, and under the General Fixes tab in Quick Fix mode. All of these options are fairly blunt instruments, though,



Elements Auto Red Eye Fix options are useful if you want to correct a group shot that contains several red-eyed subjects

and work best for shots in which the subjects' natural eye colour wouldn't be particularly noticeable.

FIXING RED-EYE MANUALLY

You can remove all traces of red from a eye with a single click

You can remove red-eye from photos using Elements' Red Eye Removal Tool, or the Red Eye Tool in Photoshop CS2 and CS3. Click on a red pupil to turn it black; if you're using Photoshop's version of the tool, you can also click and drag over an eye. You can increase the Pupil Size option if you're working on a close-up shot, while Darken Amount lets you create jet-black pupils, but the default setting of 50% for both options is usually fine. The tools can be confused if there are red tones close to the eye, for example in hair or make-up. In such cases, select the eye, float the selection to a new layer with [Ctrl]/[Command]+J, and then use the tool.



Elements' Red Eye Tool is less effective than Photoshop's version and works best on very obvious cases of red-eye

Cropping your images

Cropping out distracting elements will help to focus the viewer's eye on your portrait subject

Many of your photos will need to be cropped in some way. The standard image produced by most digital cameras tends to be quite long and thin, so you may well need to chop a bit off the top or the bottom of your portrait to make it suitable for standard print sizes such as 10x8 inches. Select the Crop Tool from the toolbox (or press C) and simply click and drag to define the crop, or enter a fixed ratio, such as 10 and 8 for Height and Width, in the tool options bar to constrain the crop to that ratio. Open the Tool

Preset picker from the options bar for a selection of preset crop ratios, but bear in mind that these are based on resolution too (see the sidebar). You can drag the handles to resize a crop once you've drawn it, or move the whole crop frame to perfect the composition. You may also want to alter the colour and transparency of the 'shield' area outside your crop in the options bar; black at 100% is generally the best option if you don't want to be distracted by extraneous information while you're trying to decide upon the most suitable crop.



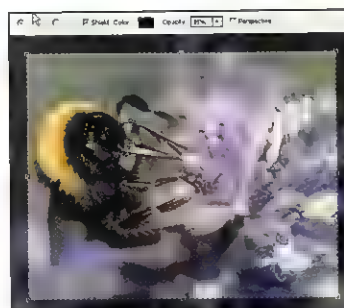
Resolution

If you enter a value in the Resolution field, you're effectively giving Photoshop instructions about output size (see page 19) – you're saying the shot needs to be x by y inches at a specific resolution, such as 240ppi. If the pixel dimensions of the crop are too small, Photoshop will resample upwards (or downwards if they're too big). If you don't want to resample the image at this stage, leave the Resolution field empty.

MORE CROP OPTIONS

You can rotate an image as you crop it, or alter the perspective

The Crop Tool can do more than just draw a rectangle or square to define a crop area. You can also use it to rotate the cropped area: after you've drawn a crop marquee, click outside the marquee and drag to rotate it, then press [Enter] to rotate the image and apply the crop at the same time. If you're using Photoshop, you can also alter the perspective of an image as you crop. Drag a marquee around the area you wish to crop, then tick Perspective in the tool options bar. Drag the corner handles of the marquee so the edges of the crop follow the horizontal and vertical lines in the image, and hit [Enter] to apply the change as well as the crop.



If you want to see areas that lie outside the crop border, you can reduce the opacity of the shield

Levelling tilted images

If you've got photos that look a little lop-sided, here's how to quickly straighten them out



Measure Tool

If you've got Photoshop, you can use the Measure Tool to straighten an image as an alternative to launching the Lens Correction filter. Click and drag along a line you know should be horizontal, then go to Image > Rotate Canvas > Arbitrary. When the dialog opens you'll see a value in the Angle field – this is the angle by which the image needs to be rotated in order for the line you've drawn to be horizontal. Click OK to level the image.

The Rotate Canvas command found under the Image menu is just about the worst way to rotate an image, unless you know the exact angle you want or are moving from portrait to landscape format or vice-versa. If you want to apply subtle rotations to level-out an image by eye, you'll want to see the effects in real time, so use the Free Transform command. Press [Ctrl]/[Command]+A to Select All, then [Ctrl]/[Command]+T to initiate Free Transform. Click and drag anywhere outside the bounding box to see your



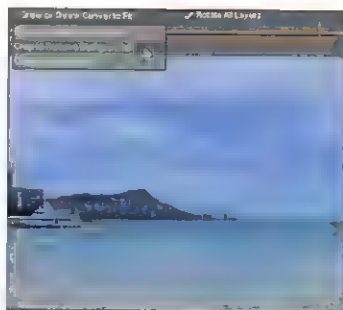
Rotating with Free Transform enables you to see your image being rotated in real time, eliminating the need for guesswork

image rotate in real time. Press [Enter] to apply the rotation, and crop the image as necessary.

THE STRAIGHTEN TOOL

Use a horizontal line in your image to apply an exact rotation

If you've got a line in your image that you know should be perfectly horizontal – for example a horizon or a feature on a building – you can level the image quickly and easily using the Straighten Tool. You'll find the tool in the toolbox in Elements, while in CS2 and CS3 it's in the Lens Correction filter's dialog. Just click and drag along the line, and when you release the mouse button the image will be rotated accordingly. If you're using Elements' version of the tool, choose Crop to Remove Background from the Canvas Options menu to crop the image at the same time. If you're using Photoshop, you'll need to crop the image afterwards



If you're using Elements, select Crop to Remove Background to crop and level an image at the same time

The Transform commands

Use these options to change the size of a layer or selection, and distort, flip or rotate content

The Transform options enable you to rotate and flip selections or layers, and apply Skew, Scale, Distort and Perspective edits. (CS2 and CS3 also have a Warp option.) You can select an option from the Edit > Transform menu (Image > Transform in Elements), or choose Free Transform ([Ctrl]/[Command] +T), which enables you to apply various transformations by holding down certain keys as you manipulate the bounding box (see below). The Transform options are invaluable for scaling objects from different sources



The Perspective option won't fix this lop-sided monument, since the distortion is pronounced towards the right – the Distort option is better

to make them fit into a new context in a composite, as well as retouching and fixing many kinds of problems.



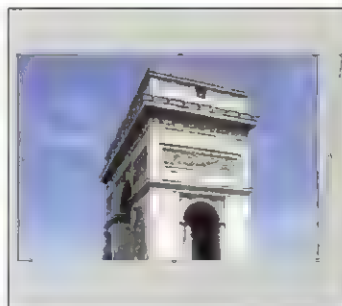
Layer opacity

As a rule you should apply the Transform commands on a duplicate layer. In Photoshop CS2/3, you can reduce the opacity of a layer while a Transform command is active, which is very useful for helping you to judge the effect of the transformation. If you're using Elements or an earlier version of Photoshop, you'll have to reduce the opacity before you initiate a Transform operation.

FREE TRANSFORM

Master the key and handle combinations for Free Transform

With the Free Transform bounding box active, you can drag any handle on the box to Scale (press [Shift] to constrain the proportions), or click and drag outside the bounding box to Rotate. If you want to Distort, press [Ctrl]/[Command] while working the handles; if you want to constrain the distortion around the centre point of the box, press [Alt]/[Option]. Press [Ctrl]/[Command] +[Shift] and drag the side handles to Skew, and press [Shift]+[Alt]/[Option] and drag a corner handle for Perspective distortion. To apply the transformation hit [Enter] or click the tick button (it's in the options bar in Photoshop, and below the bounding box in Elements).



By dragging the top-left handle out and the bottom-right one in, we've done a decent job of fixing the shot

Unsharp Mask

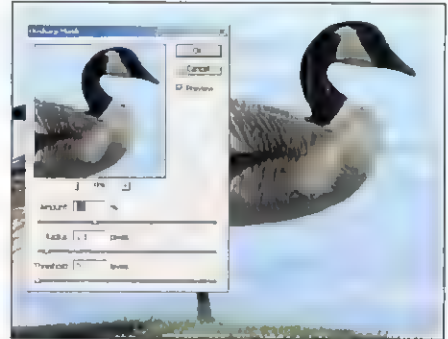
Use this simple but powerful filter to restore definition to photos that appear a little 'soft'



How it works

The Unsharp Mask filter locates pixels that differ in value from surrounding pixels by the threshold you specify, and increases their contrast by the amount you specify. Drag the Radius slider, or enter a value, to determine the number of pixels surrounding the edge pixels that affect the sharpening. The greater the radius value, the wider the edge effects and the more pronounced the sharpening.

Digital capture has an inherent softening effect on images, and photos can also appear blurred due to subject movement, camera shake or incorrect focusing. CS2, CS3 and Elements have powerful sharpening filters that you can use to correct these problems (see facing page), but if you have an image that just appears a little soft the Unsharp Mask filter will usually do a pretty good job of fixing it. Go to **Filter > Sharpen > Unsharp Mask** in Photoshop, or **Enhance > Unsharp Mask** in Elements. The settings you



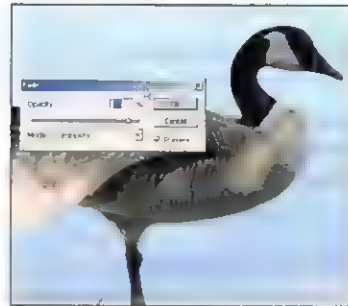
The Unsharp Mask filter's sliders enable you to carefully restore sharpness to an image without adding or worsening unsightly noise

should use will vary from image to image – see below for a general guide to using the filter.

USING UNSHARP MASK

A good option is to start with high settings, then fade the effect

You should always perform sharpening on a duplicate layer, or on a merged layer if your image contains several layers. Generally speaking, an Amount setting of 50% to 100% and a Radius setting of 1 pixel will be good for screen viewing; for print output, use an Amount setting of 120% to 200% and a Radius of around 1.5 pixels. Threshold can normally be kept at 1, though you can increase this if the image contains a lot of noise. For a more controllable sharpening effect, apply Unsharp Mask at fairly high settings, then change the duplicate layer's blending mode to Luminosity and reduce the strength of the effect using the opacity slider.



In Photoshop you can go to **Edit > Fade Unsharp Mask** to adjust the opacity and select Luminosity mode

Smart Sharpen/Adjust Sharpness

These advanced filters can do a great job of fixing problems introduced during capture

The Smart Sharpen filter in CS2/3, and its Elements counterpart the Adjust Sharpness dialog, are best used for correcting shooting errors such as poor focus or movement blur. The Remove menu enables you to target different kinds of blurring. The Gaussian Blur option does a similar job to the Unsharp Mask filter, though you're better off with Unsharp Mask for images shot at ISO200 and above, since Smart Sharpen doesn't have a Threshold setting. The Lens Blur setting is designed to correct focus

problems, although it can't work miracles. Motion Blur can remove movement blur captured at slower shutter speeds; you need to rotate the angle dial in line with the movement for this setting to work successfully, so look carefully at the 'ghosting' to determine the movement angle. It's a good idea to keep the More Accurate option enabled, since it provides you with maximum-quality sharpening, but it also slows down the Preview, so you can turn it off while you're assessing your image and back on before you OK your settings.



Digital noise

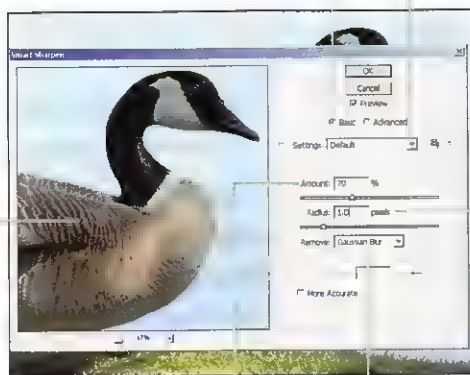
Sharpening tools can't distinguish between image detail and the random noise present in many digital camera images. As a result, sharpening a photo may greatly exaggerate this noise, so you'll have to find a compromise between increased visual 'bite' and extra noise. You'll typically want to tackle noise after sharpening in any case. See overleaf for more on noise.

SHARPENING OPTIONS

The Advanced settings (Smart Sharpen only) enable you to focus your sharpening on shadows and highlights separately. You're generally best off sticking with the Basic settings.

Use the Preview window to zoom in and check the effect of your sharpening. Move the box in the main image window to change the area displayed in the preview.

As in the Unsharp Mask filter, the Amount setting determines the intensity of the sharpening applied.



The Settings menu (Smart Sharpen only) enables you to apply previously saved sharpening settings. Use the icons alongside to save and delete settings.

The Radius setting determines how many pixels either side of edges the sharpening will affect and, in tandem with the Amount setting, controls the strength of the sharpening effect.

Choose Gaussian Blur, Lens Blur or Motion Blur from the Remove menu. Use the Angle field or dial below the menu to correct motion blur.

The Reduce Noise filter

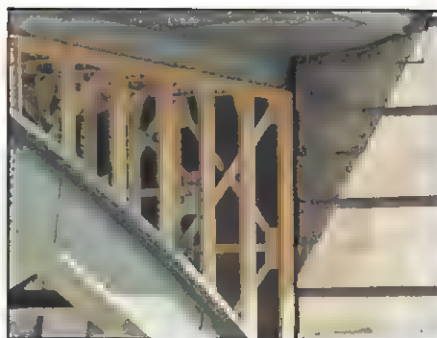
The latest versions of Photoshop and Elements include a sophisticated noise-removal filter



Other noise filters

If you're using an older version of Photoshop or Elements and don't have the Reduce Noise filter, you can reduce the appearance of noise using the Dust & Scratches or Median filters. Neither is as sophisticated as the Reduce Noise filter, but they're easy to use – just experiment with the sliders – and can do a good job if the noise isn't too severe. Both filters can also be used to quickly clean up large areas of minor blemishes.

Noise is a common problem with digital images, especially if you've used a high ISO setting in low light conditions; it takes the form of multi-coloured speckling and is most noticeable in areas of flat colour. The Reduce Noise filter in CS2/3 and Elements is designed to counter the problem, and it's very effective. The filter works by averaging out the colour values of pixels to create smooth tones, and for this reason you should avoid using it in areas that contain a lot of detail, such as a person's face; make



This detailed shot suffers from extensive colour noise throughout, but the Reduce Noise filter can eradicate it without destroying detail

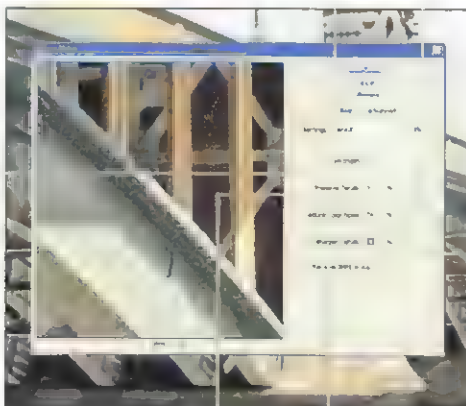
a selection of the area you want to edit first, or paint the adjustment in or out using a mask afterwards.

REDUCE NOISE SETTINGS

The Basic settings are fine for most images. In CS2/3 the Advanced tab enables you to target noise in individual colour channels.

The Strength slider controls the amount of noise smoothing. To start with, set the other sliders to 0, then drag the Strength slider to the right.

If fine details such as the rivets on this bridge vanish, you can adjust the Preserve Details slider to restore them. You may have to compromise between removing noise and preserving detail.



This image is riddled with colour noise. Increase the Reduce Color Noise setting to remove the noise effectively without blurring detail.

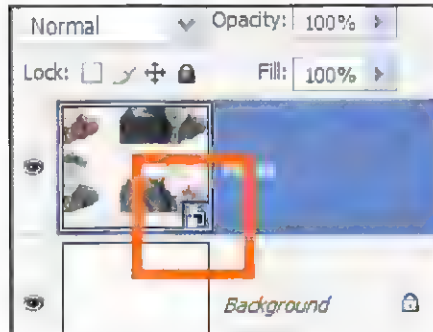
If you're using the CS2/3 version of the filter and your other settings do blur crucial detail, you can restore some definition using the Sharpen Details slider.

If your shot suffers from blocky artifacts caused by heavy JPEG compression, tick this box to remove them.

Smart Objects

This Photoshop feature enables you to make multiple edits while preserving an original file

Usually when you edit a file, the changes you make are permanent. With Smart Objects, you can set up links to one or more files and edit them without changing the originals, because the edits aren't permanent. You can also replace the originals with different files. Why would you want to? There are plenty of potential uses. If you create a print-ready version of a file, you can resize it to match a paper size and add adjustment layers to set up colour and contrast. You can then save these print-ready settings and



You can identify a Smart Object layer in the Layers palette by the small disk symbol that's displayed in the thumbnail

apply them to a range of files – just change the Smart Object link so it points to a different 'target' file.



Photoshop only

Smart Objects aren't available in Elements. There is a Place option under the File menu, but this doesn't create a Smart Object; instead it loads an image as a resizable layer. Editing is destructive, so if you change your mind about an edit and want to recover the original file, you'll have to delete this layer and use the Place command again.

USING SMART OBJECTS

TO CREATE a Smart Object, use the File > Place, File > Open as Smart Object or Layer > Smart Objects > Convert to Smart Objects commands.

EDIT YOUR IMAGE in the usual way. Not all tools are available, but key options such as tonal adjustments and the Transform commands are.

TO DUPLICATE a Smart Object layer, go to Layer > New > Layer via Copy or drag the layer on to the 'Create a new layer' icon in the Layers palette. If you edit the original file, any duplicate layers will be changed too.

TO REPLACE THE CONTENT of a Smart Object layer, go to Layer > Smart Objects > Replace Contents and select a new file. All edits and duplicates will be preserved, but the source file will be changed.

TO EDIT the original file, go to Layer > Smart Objects > Edit Contents to load the original file. When you save it, the linked Smart Object layer and any duplicates will be updated.



Working smarter

If you want to create a Smart Object layer in a document that's already open you'll need to use the Place command – you can't load a file as a Smart Object directly. Make sure you enable the Show Transform Controls option when working with Smart Objects, otherwise you won't be able to resize them. Also, note that double-clicking a Smart Object layer loads the original file for editing – it doesn't make the layer available for resizing or editing, as you might expect.

Photomerge

This powerful panorama creation tool has been improved in CS3 and Elements 6



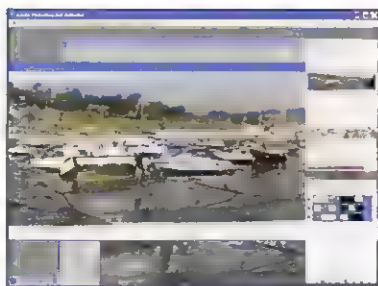
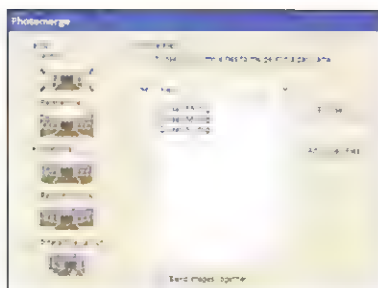
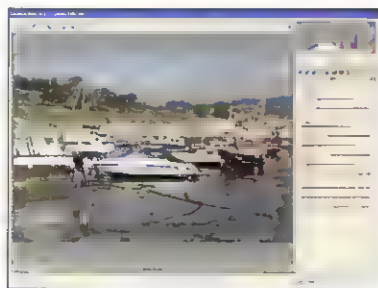
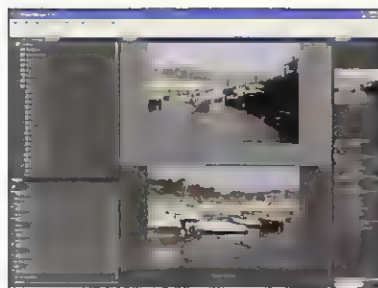
Bridge and Organizer

You can also start the assembly process from within Bridge in CS3, or from within the Organizer in Elements 6. Select the files that you want to merge and go to Tools > Photoshop > Photomerge in Bridge or File > New > Photomerge Panorama in Elements. For more on Bridge and Organizer, see Chapter 8.



Layers and masks

Look in the Layers palette after you've created your panorama and you'll see that each component photo has been assigned its own layer – these are locked to stop the panorama being pulled apart by accident. It's a good idea to flatten a panorama before saving it; there isn't usually any need to keep the layers separate, since you're likely to be treating the panorama as a large single image.



1 When you're taking a set of photos for a panorama, leave an overlap of 25% to 50% between each shot, and ideally use a tripod. Use manual not automatic exposure, and don't change the focus between shots. Movement isn't usually a serious problem, although for the simplest and most effective panorama, avoid having moving people or objects in the overlap area.

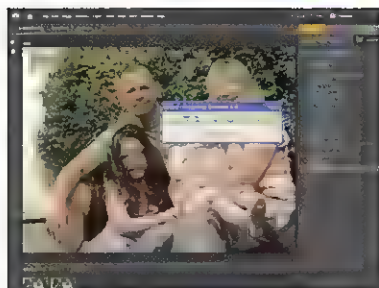
2 Load the photos into Photoshop or Elements. If you're using Raw files, process all of the photos in ACR with the same settings. Don't make any tonal adjustments – at this stage the exposure and colour of all your images should be the same. You can adjust the whole panorama after you've completed the merge.

3 Go to File > Automate > Photomerge in Photoshop, or File > New > Photomerge Panorama in Elements. Click 'Add Open Files' to add your files, and make sure the 'Blend images together' option is enabled. The Cylindrical layout is usually the best choice, even though it brings the middle forward. Perspective is more accurate, but you'll have to trim away more transparent edge areas.

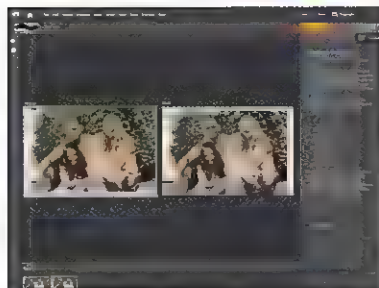
4 Click OK, and Photomerge will blend and align the photos. This can take a few minutes, even on a fast computer. The resulting panorama will have a ragged top and bottom, so use the Crop Tool to trim the edges. If Photomerge can't blend your photos accurately, use the Interactive Layout option to hand-align the photos before merging them.

Photomerge Group Shot

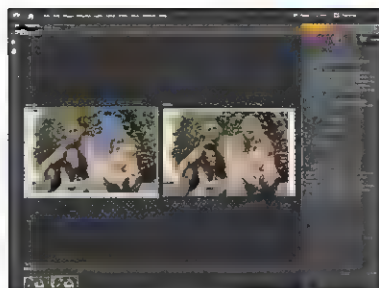
This great new Elements 6 feature makes it easy to get all your subjects looking their best



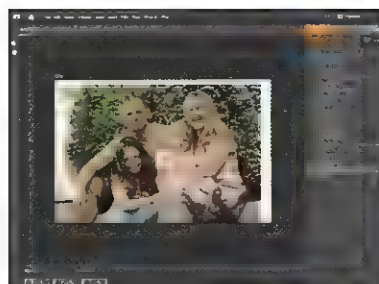
1 With any group shot, it's often hard to get everyone smiling, or even looking at the camera, at the same time. The new Group Shot feature enables you to create a composite containing the best parts of two or more shots. You'll get the best results with a tripod, but you can use shots taken by hand, although the combined shot will be limited to overlapping areas.



2 Load your photos, then select Group Shot under the Guided Edit options. You'll be prompted to select your photos from the bin, or choose Open All. Once you've chosen your photos, they'll all be loaded at once, with space for the combined shot. Pick the photo that needs the least done to it, and drag this to the space – which photo you pick isn't critical.



3 At the right you'll see Pencil and Eraser tools. Use the Pencil Tool to paint in areas you want to copy to the composite. These areas will be marked in blue. Use the Eraser Tool to remove the blue if you make a mistake. Adjust the Pencil size and texture if needed using the options at the top left. If the photos aren't lined up, use the Alignment Tool to match three points in the two photos.



4 Click Done when you're happy with the result. If the source photos didn't completely overlap, you'll see a white border which you'll need to crop out. The combined shot will look completely natural, with the best selection of expressions and poses from the source photos.



Wandering regions

Sometimes when you pencil in an area, some unrelated area will be copied as well. Group Shot creates blended regions that link your selected areas; if you get an unexpected result, tick the Show Regions box and you'll usually find that your selected area is bigger than you thought it was. Use the Eraser Tool to remove areas you don't want to include.



Merging Faces

The Photomerge Faces option is more for fun than for serious photo editing. It uses the same three-point alignment tool as the Group Shot merge does, but morphs and blends two faces instead of copying one over the other. Place the markers on three distinctive points – for example both eyes and the mouth – and watch as it creates some very interesting results!

USING BRUSHES, FILTERS, TEXT AND SHAPES

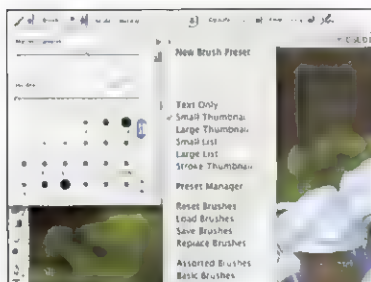
Photoshop and Elements aren't just for fixing photos. There's a range of tools for 'painting' on images, adding artistic effects, and much more – and they can be used for fixing photos too!

Photoshop and Elements might have started life as digital counterparts to the traditional photographer's darkroom, and to a great number of users that may be what they still are, but both programs are also superb creative resources. What graphic artist or designer these days isn't using Photoshop? Even if your interests are on the photo-editing side, the 'artistic' features in Photoshop and Elements give you a fantastic array of creative possibilities for adding effects to your photos, transforming them into works of art, or perhaps tackling familiar image-editing and manipulation tasks in new ways

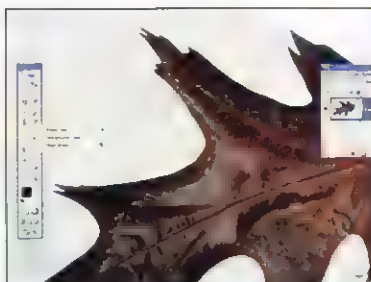
which might offer some significant advantages of their own.

Brushes and presets

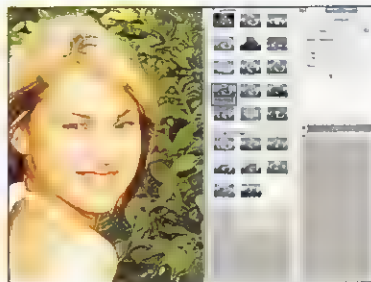
Brushes, for example, aren't just for painting colours onto your images, though they're great for that. There's a whole range of brush-based tools which give you a very flexible and controllable way of retouching an image or applying adjustments to it. Even the Eraser tools are brush-based, which means they have all the options brushes offer: you can adjust brush size and hardness, so that they cover a larger area with each sweep or act with a sharper edge, and you can also alter their opacity or change



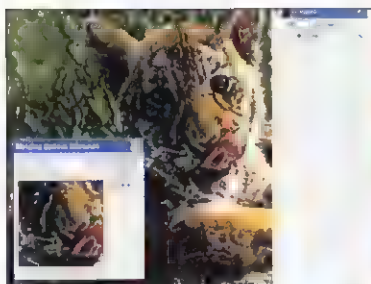
Page 101 You can adjust the size and other aspects of any brush-based tool



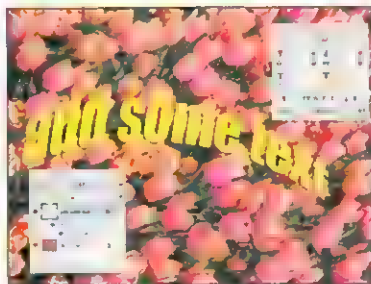
Page 103 The Eraser tools and History Brush are among the handiest brushes



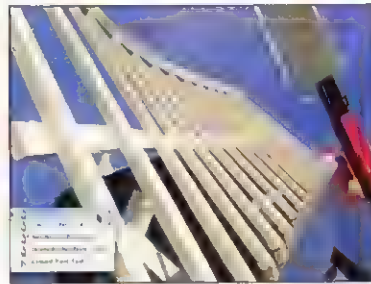
Page 105 Use filters to apply artistic effects and transform your images



Page 108 Smart Filters mean you can apply filter effects non-destructively



Page 110 Text and shapes offer a new dimension of creative possibilities



Page 112 Draw paths with the Pen Tool and use them to create selections

their blend mode to produce exactly the result you want. What's more, once you've configured a brush just as you like it, you can save it as a preset, which you can then recall instantly when you need it again.

Filters and vectors

In the graphic design community, Photoshop filters have a bit of a bad name, thanks to the fact that over the last decade or so, some filters were quite shamelessly overused and their tell-tale look was everywhere. We're not here to judge. We'll just tell you where to find filters and how to use them. We'll introduce you to a few particularly useful ones, such as the

Lens Correction filter, and explore the latest development, Smart Filters, but the rest is up to you.

Finally we'll look at a whole other category of animal. Text, shapes and paths are not made up of pixels, as your images are; instead, they're mathematically-defined vectors. Their big advantage is that vectors are resolution-independent: scale them up as much as you like and, unlike pixels, they remain as crisp and smooth as ever. This makes them ideal for purposes such as cropping, super-accurate outlines and ultra-precise selections – as well as, of course, some 'artistic' uses and effects of their own!

Using brushes

Even if you're not producing art from scratch, you can use brushes in lots of creative ways



Pencils or pens?

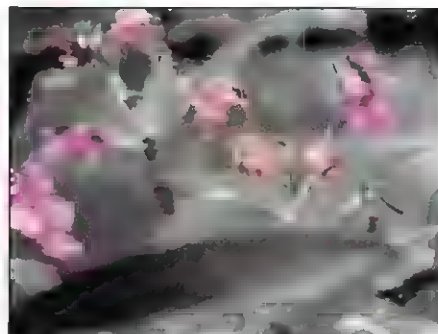
There's not much difference between the Pencil Tool and the Brush Tool. The Pencil draws with a sharper edge by default, but you can alter this, and the Brush Tool has more options. The Pencil Tool's Auto Erase option may be useful: click, then drag. If the area you clicked on contained the foreground colour, then the tool will erase to the background colour. If it didn't, then your brush stroke will erase to the foreground colour.



Modifying brushes

You can modify your brush size and hardness as you work by right-clicking/[Ctrl]-clicking on the canvas to open the Brush Preset picker. You can also use keyboard shortcuts. Pressing the right square bracket key increases the brush size in one-pixel increments up to 10 pixels, in 10-pixel increments up to 100 pixels, and in increments of 25, 50 and 100 pixels thereafter; use the left square bracket key to reduce the brush size by the same increments. Hold down [Shift] while pressing the same keys to increase or decrease brush hardness.

As we've already seen, several tools are brush-based, like the exposure tools (Dodge and Burn) – their effects apply only where you 'paint' them on. By comparison, the plain old Brush Tool seems a bit dull: it simply lays down colour on your image (or blank canvas). For painting, a specialist program such as Corel Painter seems far sexier. But the Brush Tool in Photoshop and Elements offers a wide range of options, all available when you're using any brush-based tool. As well as painting, this makes brushes ideal



We used Elements' Impressionist Brush and the Color Replacement Tool to transform this photo of some flowers into an original work of art

for fine-tuning adjustments or selections, precise colour retouching and many other creative purposes.

BRUSHING UP

PAINTING ON A PHOTO with the brush set to Normal mode simply applies the foreground colour over the photo. The other tool blending modes blend your brush strokes with the layer content in a similar way to layer blending modes. You could also paint on a new layer and then change the layer blending mode.

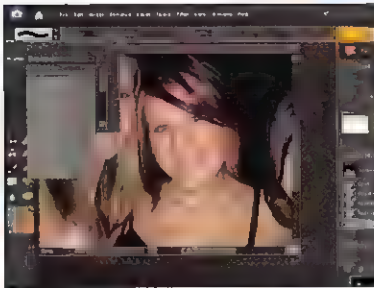
THE OPACITY SETTING also changes the tool's effect – see facing page.

ELEMENTS' IMPRESSIONIST BRUSH creates a painted effect when you brush over a photo. It doesn't look a lot like a real impressionist painting, but it's a good way to create simple artistic effects.

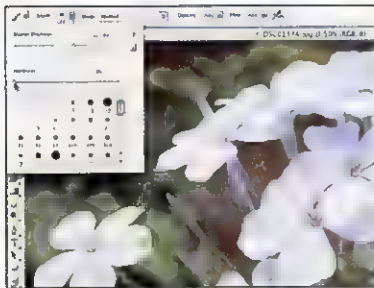
THE COLOR REPLACEMENT TOOL is the most useful brush apart from the Brush Tool itself. Set Mode to Saturation and foreground colour to black, and you can selectively paint out the colour from a photo. Use Color mode to replace colours with other colours. See page 68 for more.

Brush options

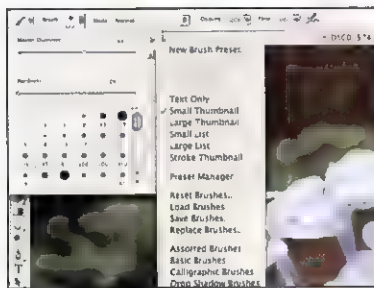
You can do more than just paint with brushes, and there are many ways to configure them



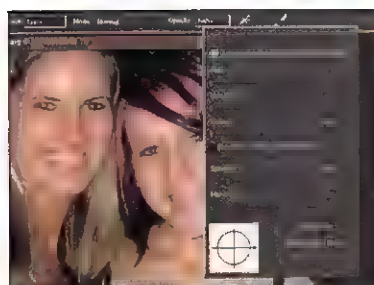
When you select any brush tool, you'll see a number of settings in the options bar. Click the brush preview to open the list of preset brushes, and drag the Diameter slider (Size slider in Elements) to change the diameter of your brush. Changing tool Mode has an effect akin to altering layer blending mode (see page 40); Opacity controls how solid or 'dense' a colour the brush lays down.



Click the airbrush button and the Brush Tool 'sprays' more colour the longer you hold down the mouse button. The Flow setting in Photoshop (not Elements) has a similar effect but on brushing. The hardness slider (in the brush picker in Photoshop; see step 4 for Elements) determines how sharp the edge of your stroke is; at lower settings, it blends more gradually into the image.



Click the arrow at the top-right of the Brush preset picker to open the palette menu. Here you can change the way in which the list of brush tips is displayed – as a list, as shape thumbnails or as stroke thumbnails. You can also load and save brush presets – there's more about creating and managing presets on page 104.



Click the brush icon at the far-right of the tool options bar in Elements (it's a menu icon in Photoshop) for an additional range of brush settings. Use these to further customise brush shape, hardness and stroke properties. If you're using a graphics tablet (see sidebar), you can enable various pen pressure control options.



Displaying your brush

The default tiny paintbrush icon can make brushes tricky to use. In Preferences you can change Painting Cursors to Precise (crosshairs, which show you the centre of the stroke but give no clue as to how big a mark you'll make) or Brush Size. While you're working, press the Caps Lock key at any time to change the cursor: if you selected Standard or Brush Size in Preferences, it changes to Precise; if you set it to Precise, it changes to Brush Size.



Using graphics tablets

If you get serious about drawing or painting in Photoshop or Elements, you'll need a graphics tablet. The market leader, Wacom, offers many sizes and models, from the budget-priced Graphire range to the Intuos range aimed at professionals – the latter are a fair bit more expensive but offer smoother drawing and more features. For details, visit www.wacom.com. In Elements there's a separate Tablet Options menu second from the right of the options bar; in Photoshop, tablet-related options are included among the others in the Brushes palette (step 4).

The History Brush

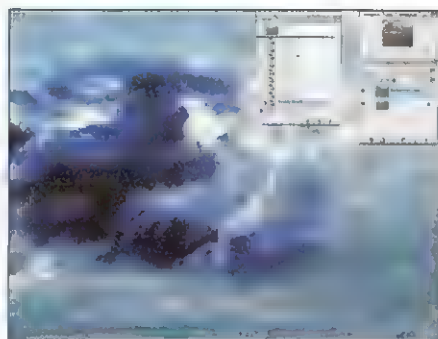
Paint pixels from an image's history states back in – but only where and how you want them



Art History Brush

Photoshop's Art History Brush works in the same way as the History Brush but enables you to paint information from saved history states using stylised strokes that simulate different artistic styles – it's a great way of turning your photos into digital works of art. You can experiment with different effects, for example by applying filters or filling an image with a solid colour, before painting with the Art History Brush.

Most users couldn't manage without Undo, and you may be used to undoing multiple actions by reverting to earlier history states. Photoshop's History Brush enables you to paint pixels from a history state into an image selectively without reverting the whole image. What's more, as a brush-based tool, it has all the usual brush options, so you can apply the effect subtly at lower opacity, use various tool blending modes, or change the type of brush and other settings to vary the way it applies the history pixels.



A Gaussian-blurred history state was used with a Color Burn blending mode to paint over areas of the sky to create this effect

It's a brilliant way to apply effects in localised areas without having to create a mask or selection first.

USING THE HISTORY BRUSH

You don't always have to work at 100% opacity. Feel free to try layering strokes with lower opacity settings for a subtle effect.

The full range of blending modes enable you to change the way in which your History Brush strokes are blended with underlying pixels.

You can choose from a whole variety of brush shape presets in the Brushes palette, as well as edit them to achieve unusual results.



Use different Flow settings to control the rate at which your brush strokes are built up, or enable the Airbrush option to 'spray' your history data on to the canvas.

Specify any history state or snapshot as the source for the History Brush by clicking in the column to the left of it.

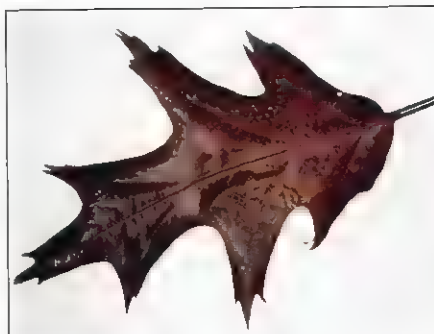
Click this button to create a snapshot of a particular history state. This will save that state even if you make so many edits that it vanishes from the ordinary list in the History palette.

Eraser tools

There's more to the Eraser Tool than you might think, and it has two even more useful variants

The Eraser Tool changes pixels to the background colour if used on the Background layer or any layer with transparency locked (see page 38); otherwise, it turns pixels transparent. If you enable the Erase To History option, it acts just like the History Brush. Because the Eraser is brush-based, you can alter its size and opacity to customise its behaviour, or make it harder-edged, for example, for a 'crisper' effect.

The Eraser Tool shares a toolbox compartment with two specialised erasers – the Magic Eraser Tool and



The Background or Magic Eraser tools can remove an unwanted background from an image quickly and effectively

the Background Eraser Tool. Both of these are designed to erase whole areas of similar colour.



Erasing colour areas

Like the Eraser Tool, the Background Eraser is brush-based – when you click, the tool samples the colour at the brush tip, then erases that colour from areas you brush over. The Magic Eraser is faster at removing large areas of relatively uniform colour. Either tool can be a great way to remove flat-coloured backgrounds such as dull skies while keeping the edges of foreground objects intact, so you can add a new sky behind them.

ERASER TOOLS OPTIONS

You can change the size, hardness and brush shape of the Eraser and Background Eraser by opening the Brush Preset picker (see page 104).

The Magic Eraser's options are similar to those for the Magic Wand Tool, which we looked at on page 28.

To make sure you don't accidentally erase pixels you want to keep, you can make a selection, then switch to the Eraser Tool with the selection still active. The tool will work only within the selected area, even if you brush outside it.



Set the Background Eraser's Limits option to Contiguous. It will then erase only pixels that are adjacent to those initially sampled.

You can make the Background Eraser and Magic Eraser affect a larger or smaller range of colour by increasing or decreasing the Tolerance setting.

Click to sample the colour you want to erase, and drag with the Background Eraser to remove the sampled colour. Be careful not to stray over areas you want to keep.

Using and saving Presets

Save all your customised brushes, gradients, colour swatches and patterns in one location



What's in a name?

As you get used to working with the various presets, you'll find that naming them becomes less important. In the case of brushes, for example, it's often more useful to be able to see a preview of the different brush strokes rather than the name – but if you do want to see a brush's name, you can hover your cursor over the preview to bring up the tool tip.

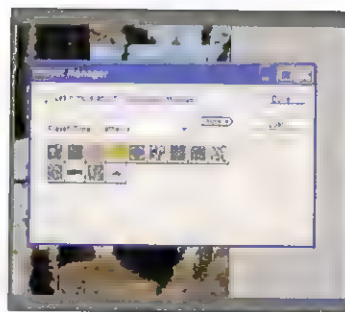
With the Brush Tool selected, click the brush preview in the options bar to open the Brush picker, then click the arrow at the right to open the palette menu. Click Load, and you'll see that there's a huge list of built-in brush presets. It's hard to keep track of all of them, and the Preset Manager (Edit > Preset Manager) enables you to edit the list or even create your own set of brushes from scratch. You'll also see swatches, gradients and patterns listed, and buttons that enable you to save and load your

customised collections, so you can delete the presets you never use and add ones you do use. Bear in mind that the Preset Manager isn't a floating palette from which you can select presets – it only changes the list of presets that appears in the relevant tool's preset picker. Another less obvious feature is that if you double-click on any preset, you can change its name. Double-click a brush thumbnail, for example, and a dialog will appear in which you can edit the name. The other presets can be renamed in the same way.

CUSTOM PRESETS

It's easy to create and save your own patterns and brushes

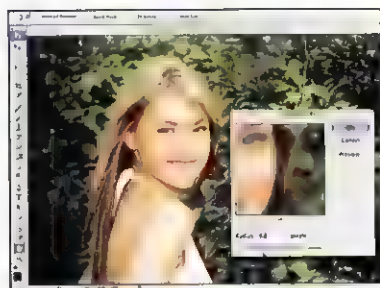
While there are lots of brushes to choose from in Photoshop and Elements, the selection of preset patterns is quite small. However, it's very easy to add your own. Open a photo containing a texture you'd like to save, use one of the selection tools to select an area, and go to Edit > Define Pattern from Selection. Give the pattern a name and it will be added to the list of presets, and will then appear in the Pattern picker. You can create your own brushes by selecting a shape within an image and going to Edit > Define Brush from Selection. Note that brushes will be based only on outline and greyscale information, not colours.



Not enough presets? Create your own and save your new collection using the Preset Manager

Using Filters

Filters enable you to transform images and add effects – here's how to get started with them



Dozens of filters come with Photoshop and Elements, and you can add more as plug-ins. Some can be used directly from the Filter menu (like this Blur). Others – mostly the more 'creative' ones – are presented in a gallery showing a thumbnail of each effect. Select **Filter > Filter Gallery** or a creative filter to open this. You'll see a preview of your image and a list of filters arranged in sets.



Practical filters

Filters aren't just for artistic effects. Some of the most useful for photo-editing are those for sharpening, blurring, or reducing noise. We look at these elsewhere in this Focus Guide. **Adding** some noise can disguise editing or help composites blend together. Some of the Distort filters, especially Lens Correction (see page 107), are invaluable. Note that these filters, and some others such as Liquify, don't appear in the Filter Gallery.

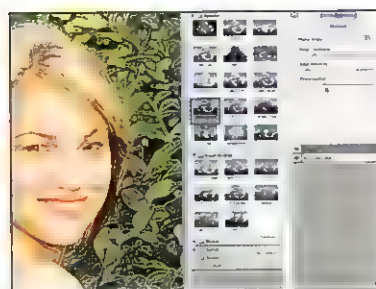


Click the arrow next to the name of a set to open it. Click on a filter, and it'll be applied to your image. To try a different filter, click on it in turn – the first effect will be replaced by the new one. To apply more than one filter, click the 'New effect layer' button at the bottom-right – you can add as many filters as you like, and changing their stacking order can transform their effect.

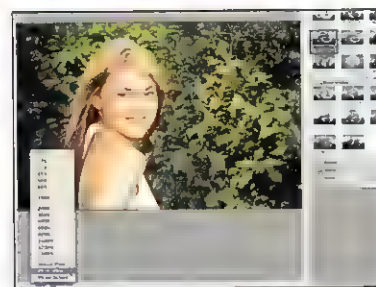


Speed it up

You can choose a zoom setting from the menu at the bottom of the Filter Gallery (see step 4), or click the plus and minus buttons to zoom in and out, or hold down [Ctrl]/[Command] or [Alt]/[Option] and click. The zoom factor affects the speed of the preview, and if you're working on high-resolution photos – in practice this means anything above 3-megapixel – previewing at the 'Fit in View' zoom preset may be very slow. It's also a waste of time, because it won't show you the fine detail of the effect, so always zoom in to at least 50% or even 100%.



When you select most filters, at the top-right of the window you'll see sliders and menus for controlling the effect. These are different for every filter, and some filters don't have any configurable settings. Experiment with these settings to see what they do. Because every filter is different, there are no definitive rules – it's up to you to create an effect that you like.



Click OK to apply a filter, or Cancel to return to the unaltered photo. At full resolution, you may not get the result you expect, especially with a high-res photo. Zooming out to fit the preview in the window will sometimes hide the detail produced by the filter – you'll see a change, but it won't be clear what's happening. Often you'll need to zoom in to 100% to see the full effect.

Artistic filters

The artistic filters don't quite create an instant art effect, but they're well worth exploring



Face value

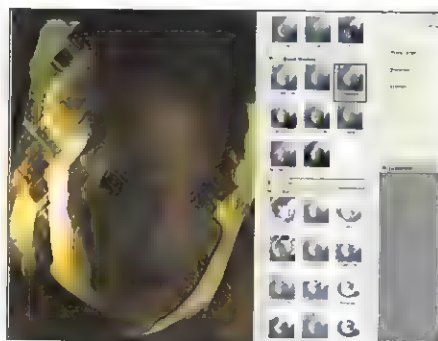
The human brain is very sensitive to faces, and even more sensitive to distorted faces, so you have to be very careful when applying filters to people shots to make sure that faces remain recognisable – it's even better if you can still make out an expression. You may need to select different areas of the photo and apply your chosen filter at different strength settings for the best results.



Advanced effects

The artistic filters really come into their own once you start combining them. You'll have to experiment to find effects that you like, but the results can look a lot more interesting than if you use a single filter. Try adding several new effect layers using the 'New effect layer' button and then applying multiple filters to portrait shots, for example. Bear in mind that you can apply filters to a duplicate layer and then add a layer mask (or use a clipping mask) to remove or reduce the effect in selected parts of the image, for example to keep facial features sharp.

The artistic filters in Photoshop and Elements include not just the filters in the Artistic set. Almost all of the filters in the Filter Gallery have creative applications, and you can also combine them with filters that aren't found in the gallery, such as the Blur filters, to modify their effects further. In reality none of the filters is powerful enough on its own to create convincing instant-art effects – at least not when put up against real paintings and drawings – but you can still create some nice images with them, as long as you're



Some of Elements' filters come into their own when combined with others or applied at low resolutions – such as this Crosshatch effect

prepared to spend some time experimenting. Below we've listed some suggestions to get you started.

ARTISTIC FILTER FAVOURITES

CUTOUT simplifies the detail in a photo to create areas of flat colour, and you can specify the Smoothness and the Number of Levels (colours). The filter is useful for creating stylised illustration effects.

SPATTER creates a paint-spatter effect. With most photos you'll need to set the Spray Radius as high as it goes to create a noticeable effect.

HALFTONE PATTERN creates a convincing newsprint effect. It might not be your first choice for an artistic effect, but it's useful for collages and graphic design work.

TEXTURIZER produces a canvas, burlap or brick look, and the sandstone option can add an interesting 3D texture effect to printed photos.

WATER PAPER creates an effect that simulates ink diffusing along the grains of wet paper or certain kinds of fabric painting.

Correcting camera distortion

Perspective distortion is a common problem in architectural shots, but there's a filter to fix it

When you tilt your camera up to shoot a tall building from ground level, perspective makes the verticals in the shot slope inwards. You can straighten these converging lines with the Perspective Transform tool. Double-click the Background layer in the Layers palette to unlock it, then go to **Edit > Transform > Perspective** (**Image > Transform > Perspective** in Elements). Drag the bounding box's top handles left or right to make the lines vertical, then crop as necessary. In CS2/3, use the Lens Correction filter. The Correct



Here's a typical example of converging verticals or perspective distortion – correct it by going to **Filter > Distort > Lens Correction**

Camera Distortion filter in Elements 5/6 is almost identical except that it lacks Chromatic Aberration sliders.



Extending edges

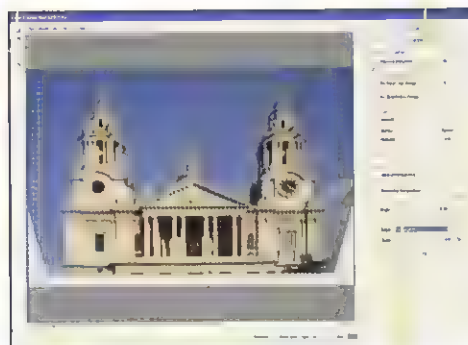
Whenever you fix perspective distortion, you'll often end up with areas of empty canvas at the sides of the shot that you'll need to crop away. If the shot has a fairly plain background, though, you can try changing the Lens Correction filter's Edge option from Transparency to Edge Extension, which fills in the empty areas with pixels that are similar in colour to the background. You could also scale the image up using the Scale slider.

THE LENS CORRECTION FILTER

Sometimes a lens may make a shot bulge outwards from the centre, creating a fish-eye distortion – use the Remove Distortion Tool to correct this or the opposite, 'pincushion' distortion.

The Move Grid Tool enables you to align the edges of the grid with the building's walls to help you straighten them accurately.

Use these buttons to zoom in to check the alignment of the edges against the grid, or out if you want a better view of the image as a whole.



The dialog also enables you to remove colour fringing around the edges of objects and to reduce vignetting (darkening or lightening at the corners of the shot).

Straighten the building's converging vertical lines by dragging the Vertical Perspective slider to the left. You don't need to unlock the Background layer first.

Use this dial to rotate the shot to fine-tune the position of the vertical lines, or type in a rotation angle for greater precision. (For other ways to level shots, see page 89-90.)

Smart Filters

This CS3 feature enables you to add filters non-destructively, then adjust and mask them later



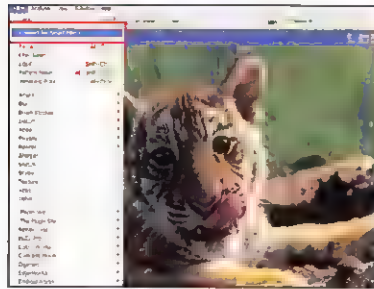
Smart Filter limitations

Smart Filters aren't available in Elements or in earlier versions of Photoshop. They also can't be used with third-party plug-ins – the only compatible plug-ins are the set included with Photoshop itself (and not even all of those). You can also add the Shadow/Highlight and Variations adjustments as a Smart Filter, but none of the other adjustments.

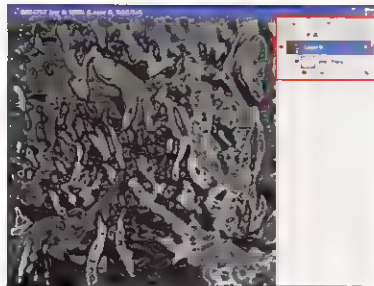


Do you need them?

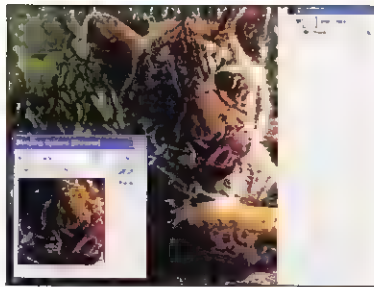
The limitations above mean that Smart Filters are of limited use at present. They're ideal if you want to apply native Photoshop CS3 filters without swelling file size, but bear in mind that you can use any filters on a duplicate layer or a selection floated to a new layer with [Ctrl]/[Command]+J. As we noted in the sidebar on page 106, you can then use layer masks or clipping masks to restrict them. What you can't do, of course, is adjust them after you OK them: unlike Smart Filters or adjustment layers, once filters are applied they alter pixel content permanently.



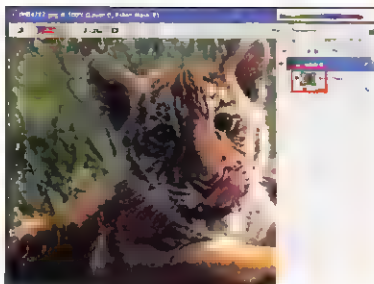
One of the more creative applications of Smart Objects (see page 95) is using them with Smart Filters. These are a new feature in Photoshop CS3 which enables you to apply filters non-destructively and adjust them at any later time. Start by converting your photo (or layer) to a Smart Object – select **Filter > Convert for Smart Filters**.



In the Layers palette you'll see that the image is now called **Layer 0** and it has a distinctive Smart Object icon. Choose a filter from the **Filter** menu – you'll notice that some are not available – and apply it to the image. You'll be able to configure the filter in the usual way. A new sub-layer called **Smart Filters** appears in the Layers palette, with the name of the filter below.



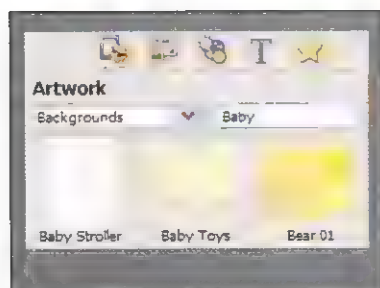
Smart Filters work just like adjustment layers. Double-click the filter's name to tweak its settings, or double-click the icon to the right of its name to alter its blending mode or opacity. Add more filters and they appear as additional sub-layers. You can adjust each at any time, and change their stacking order to change the total effect. The actual image data is never altered.



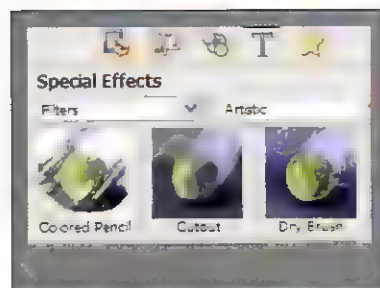
Just as with adjustment layers, a mask is automatically created when you use Smart Filters. Click the box next to the words 'Smart Filters' and you can edit the mask with brushes or other tools. Draw a gradient across the image, for example, to 'fade' the filter effects gradually. You can't mask filters separately, but you can change the opacity and blending mode of each individually.

Elements' Effects palette

Elements tries to make it all easier for you by bringing creative effects together in one place



In Elements 6, open the Effects palette; in Elements 5, the Artwork and Effects palette. Use the buttons along the top to view different categories of effects (or all of them): in Elements 6, if you choose Filters, Layer Styles or Photo Effects, a drop-down list helps you find the appropriate sub-set for what you want to do. Simply double-click on an effect to apply it to your image.



In Elements 5, the Special Effects list largely duplicates the Filter menu, and the same Filter Gallery will appear if you use any of these effects, but there are some extra Photo Effects such as drop shadow that aren't included in the gallery. In Elements 6 these now appear (more logically) in the separate Photo Effects list, and the Filters list is identical to the Filter Gallery.

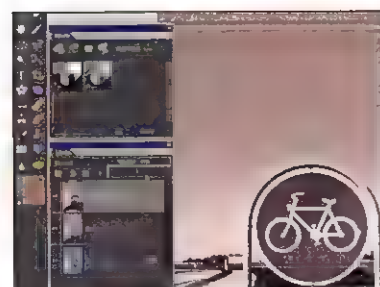


Photo Effects in Elements 6 include frames, tints, 'old photo' effects and more. Each of these is applied as a separate layer, and you can add several of them to a photo, as we've done here. You'll need to adjust the opacity of at least the top layer in order to see the effect of layers beneath, and optionally change the layer blending modes too for a variety of interactions.



We've already looked at Layer Styles (page 45). You can view these in helpful categories such as Bevels, Glows and so on. They'll apply either to an entire layer or to layer content on a transparent background (like the sign here: we selected it, floated it to a new layer, then added an outer glow). Double-click the effect icon next to the layer name to adjust the settings.



Elements 4 and 5
The Styles and Effects palette in Elements 4 contains many of the options found in Elements 5's Artwork and Effects palette. The Filter Gallery and Layer Style options are identical, while many of the frames, text effects and photo effects found in Elements 5 can be found in the Effects menu. In v5 you also get themes, backgrounds, graphics and shapes, which are scattered in different places again in Elements 6!



Elements 5 variations
Elements 5's Artwork menu includes backgrounds, frames and graphics that you can combine to create your own designs. Select Themes and you'll see more frames, but most themes are a combination of a frame and a background image. The star button opens the Favorites palette, where you can store items from the other four palettes for quick access – backgrounds, themes, filters, layer styles or other effects. To store one, right-click on it and select 'Add to Favorites'. This works the same in Elements 6, but there's no 'star' to open the Favorites palette directly.

Working with text

Use the various Type Tools to add captions, labels or more creative elements to images



Text warp

To warp your text, click the button at the right of the options bar displaying a slanted T with an arc under it. You can choose from a list of effects such as Arc, Bulge, Flag, and Twist to apply an initial distortion, then fine-tune it using sliders. Warps affect all the text on the layer – if there's some text you don't want to distort or want to apply a different effect to, just click elsewhere on the canvas and type it on a separate layer of its own.



Text effects

In Elements you can add a variety of effects to your text simply by double-clicking on presets or dragging them on to the appropriate text layer – to access the presets, go to the Content palette in Elements 6 and select Text in the pop-up. (In Elements 5, they're in the Text palette.) Effects are added as Layer Styles (see page 45), and the results can depend on the size of the text. After adding an effect, double-click the effect icon next to the layer's name in the Layers palette to customise it. In Photoshop use Layer Styles directly to add a drop shadow, glow or other effects to the text layer.

Adding text to your images is straightforward, but there are then more options than you might expect. To begin, click the 'T' icon in the toolbox to select one of the Type Tools, click in your image to position the cursor, and start typing. There are separate Horizontal and Vertical Type Tools, though you can click a button (at the far-right of the tool options bar in Elements, or near the left in Photoshop) to change type orientation. The Type Mask Tools act like 'cookie cutters' (see facing page) to create a mask in the shape of your



Type layers work just like other layers, so after entering your text you can resize it, distort it, or use Transform to rotate it and move it around

text. You can change the size of text and other attributes such as font and colour, or move it around the canvas.

TEXT OPTIONS

THE FONT AND STYLE menus show previews of the available options – bold and italic versions, for example. Change text size using the menu or by typing in a value. Click the colour swatch to change the text colour.

YOU CAN ADD faux bold, faux italic, underline and strikethrough effects (the 'T' buttons, in the Character palette in Photoshop). Anti-aliasing (the 'AA' button next to the font size menu) smooths out the edges of text.

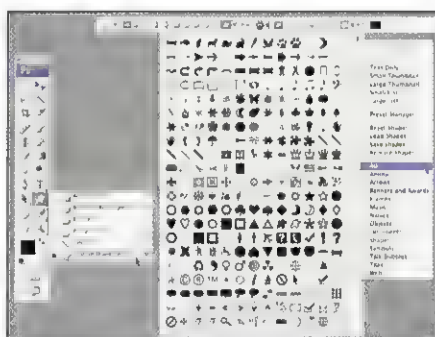
JUSTIFICATION controls whether the text is aligned to the left, middle or right of the canvas. A leading (pronounced 'ledding') option controls the spacing between lines of text. In Photoshop there are advanced options for character spacing, paragraph indents and so on.

MANY EFFECTS and adjustments don't apply to text layers because text is vector shapes, not pixels. You can convert it using Layer > Rasterize, but beware: you can't edit the text or change any of its attributes afterwards.

Working with shapes

Black-and-white clip art might not seem very cutting-edge, but you can do a lot with it

Select the Custom Shape Tool in the toolbox and go to the Shape pop-up in the options bar. Pick a shape from the collection, then draw a marquee to add it onto your image. (In Elements 6 you can also go to the Content palette, choose Shapes in the pop-up, then drag a shape onto your image or just double-click on one.) The collection includes silhouette animals, leaves, flowers, arrows and 'talk bubbles'. Alternatively, draw geometric shapes with the Rectangle Tool or the other shape creation tools in the toolbox compartment.



The range of shapes is dazzling. (To find them in Elements 5, click the Artwork button in the Artwork & Effects palette, then choose Shapes)

All shapes appear in layers of their own, and anything you can do to a layer, you can also do to a shape.



Shaped crops

The shapes in the collection are also available when you select the Cookie Cutter Tool from Elements' toolbox. This tool creates unusual crop effects by masking your photo within the selected shape (you can resize the frame and move it around before committing to the crop). Use the Crop Shapes set, for example, to create ragged edges around your photo. Add a drop shadow or other Layer Style for extra visual interest.

SHAPE-BASED EFFECTS

ADD PICTURE FRAMES using the Frames set. For best results, duplicate your photo to a new layer, hide the Background layer, crop the new layer to create a transparent area around the photo, and then add the frame.

USE LAYER STYLES to add plastic, glass and bevel effects to shapes. Once you've added a Layer Style, you can customise it to create a thicker bevel, for example, or a more obvious drop shadow.

TO CHANGE THE COLOUR of shapes, click the foreground colour swatch in the toolbox. Fill them with a pattern by going to Layer > Layer Style > Pattern Overlay, or add an outline via Layer Style > Stroke. You can't use the normal Edit > Stroke command (called 'Stroke (Outline) Selection' in Elements) until you turn the shape from vectors into pixels – see sidebar.

USE LAYER BLENDING MODES to combine shapes. Different modes used with different colours can look particularly effective.



Vectors vs rasters

Like text, shapes are mathematically-defined vector graphics, not pixels. In Photoshop, many menu options are greyed out until you rasterize them (see facing page). In Elements, if you try to apply filter effects or other adjustments to them, a dialog will appear prompting you to 'simplify' or rasterise the shape layer first, and you must OK this to proceed. Once simplified (converted to bitmaps or 'rasters'), shapes will no longer be resolution-independent, which means you may notice a loss in quality if you increase their size significantly.

The Pen Tool

Photoshop's Pen Tool is ideal for tracing around objects with both straight and curved lines



Freeform Pen Tool

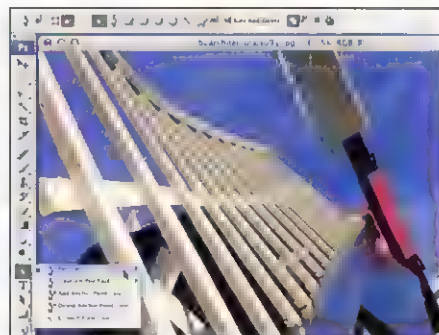
If you want to draw paths 'freehand' rather than by placing and manipulating points, you can do so using the Freeform Pen Tool, which is grouped with the Pen Tool. As you draw a path, editable corner and curve points are placed automatically. If you enable the Magnetic option, the Freeform Pen will behave like the Magnetic Lasso Tool, snapping to edges; click the arrow next to the Magnetic box to configure Frequency, Width and Contrast options.



Adjusting a path

To adjust the contour of a path curve, select the Direct Selection Tool (A) in the toolbox (or if you're using the Pen Tool, hold down [Ctrl]/[Command] to activate it temporarily), click on one of the curve's handle points and manipulate it. To select and move an entire path, click on any anchor point or line segment with the Path Selection Tool (the solid black arrow in the same toolbox compartment as the Direct Selection Tool – if you're using the Pen Tool, hold down [Ctrl]+[Alt] ([Command]+[Option] on a Mac) to activate it until you release those keys).

In Photoshop, as well as creating vector objects with the Rectangle Tool and the other shape tools, you can draw shapes with the Pen Tool. What's more, instead of shapes, all these tools can create paths – vector outlines you can turn into selections. The Pen Tool is particularly suited for tracing objects made up of both straight lines and smooth curves. You click to place anchor points as you trace around the object with it, but if you hold down the mouse button and drag, you create a curve instead of a straight line. The shapes



The Pen Tool can draw either straight or curved paths, and you can use a variety of related tools to edit the paths for a very precise selection

of the curves, the number of anchor points and their positions, can all be adjusted later for a perfect outline.

CREATING PATHS WITH THE PEN TOOL

SELECT THE PEN TOOL, and make sure you click the Paths button at the left-hand end of the tool options bar or you'll be drawing shapes.

CLICK TO PLACE an anchor point, move along the object you're tracing and click again to place another. It will be joined to the first by a straight line. To draw a curve instead, click and drag in the direction you wish the curve to follow. A curved segment's anchor point will have two handles extending from it; these are used to adjust the curve (see sidebar).

TO CREATE SELECTIONS, the path must be closed. Just as when you're using a Lasso Tool, a small circle will appear next to your cursor when it's in the right place, indicating that the next click will close the path.

USE THE Add or Delete Anchor Point tools to place extra points for more precision or remove unwanted ones. Click on a point with the Convert Point Tool to change it from a corner to a curve point or vice-versa.

Working with paths

Just as you can manage layers using the Layers palette, you control paths in their own palette

When you draw a path with the Pen Tool, it appears in the Paths palette as the Work Path. Once you finish working on a path and deselect it, the path disappears from view in your image, but unlike a selection it isn't lost. It's still there in the Paths palette – click on it and it becomes active and visible in the image once more. Once you start drawing another path, however, the new path replaces the previously saved Work Path. If you want to save the current Work Path first, the simplest way is to rename it: double-

click on its icon in the Paths palette, and type a name in the Save Path dialog that appears. Other functions in the Paths palette work like their Layers counterparts: to duplicate a path, drag it onto the 'Create new path' button, or select the path and choose Duplicate Path in the palette menu; to delete a path, drag it to the palette's trashcan icon.

Like selections, paths can modify each other: use the Add, Subtract, Intersect and Exclude buttons in the tool options bar to set how a new path will affect existing ones.



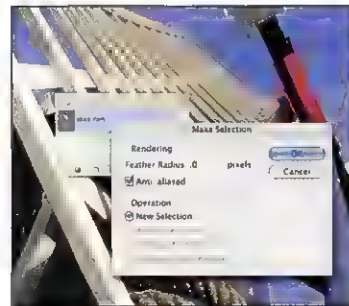
Reopening paths

When you've closed a path, you can reopen it by using the Direct Selection Tool (see facing page). Simply click on an anchor point or line segment and hit the [Delete] key. This will delete the selected area, opening the path. To add to the path, click on an end anchor point with the Pen Tool to activate it; the next point you draw will be connected to that point by a line segment.

TURNING A PATH INTO A SELECTION

You'll create paths most often as the basis for a selection

Why base selections on paths? Well, if what you want is a soft-edged, graduated selection, paths are *not* the right way to go. Paths are vectors, and you can't beat vectors for precise lines and smooth curves, so they're ideal for sharp, accurate selections. In addition, of course, you can return to a saved path and make minute adjustments at any time, which makes paths more flexible than most other types of selection. To turn a path into a selection, select the path and click the 'Load path as a selection' button at the foot of the Paths palette or choose Make Selection from the Path palette menu – the latter offers more selection options.



Convert a path into a selection using the command in the palette menu and you get some useful extra options

Chapter 8

ORGANISING AND SHARING YOUR PHOTOS

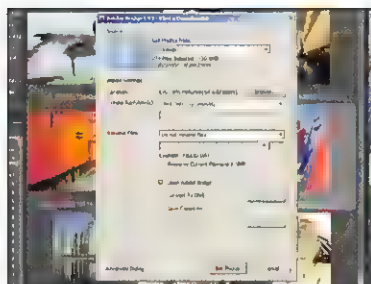
Manage your image collection using the powerful features in Bridge and Organizer, and share your edited photos using Elements' easy-to-use but stylish built-in options

There's little point mastering all the tools in Photoshop and Elements if you then can't find the photos you want to edit because they're sitting in a disorganised jumble somewhere on your hard drive. There are some excellent photo management applications on the market, and the built-in utilities that come with computers these days aren't bad either (Windows Photo Gallery in Vista, the Scanner and Camera Wizard in Windows XP, or iPhoto on the Mac). If you're using Photoshop or Elements to edit your photos, though, there is an advantage to using the photo management utilities that come in the box. Not

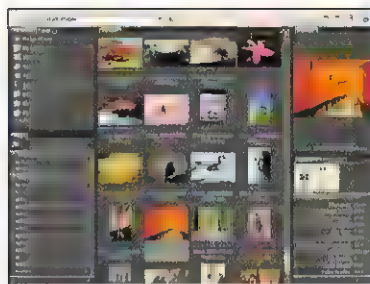
only are Adobe Bridge and the Elements Organizer powerful utilities in their own right, they're also fully integrated with the editing software – select File > Browse in CS3, for instance, and Bridge leaps into action automatically.

Using Bridge

Bridge is actually a separate, stand-alone program for viewing, sorting, searching and even processing your images. At its simplest, it acts as a light table to help you preview and organise your image collection, but it also offers time-saving batch-processing options – use it, for example, to rename a whole folder



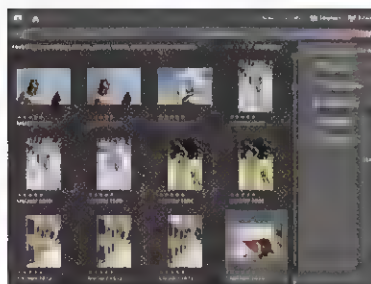
Page 116 Import your images the easy way with Adobe Photo Downloader



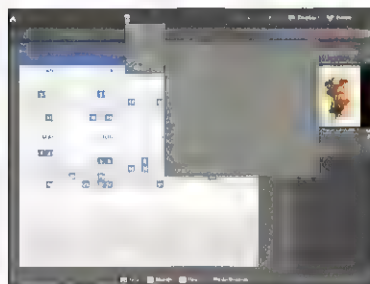
Page 116 Find your way around the new-look Bridge interface in CS3



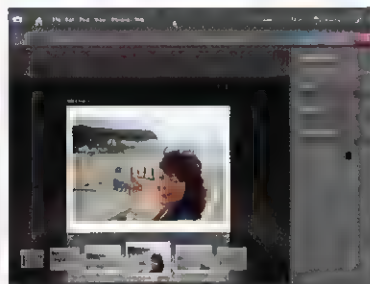
Page 117 Examine your photos for flaws using Bridge's new loupe feature



Page 118 Access Elements' editing and sharing features from the Organizer



Page 119 Use Elements' calendar options to find the photos you want fast



Page 120 Create eye-catching web galleries in minutes with Elements

full of shots for you. It can even act as the host for Adobe Camera Raw, so it can open Raw files directly and apply ACR edits to a batch of Raw files as soon as you locate them.

Using Organizer

Elements' counterpart to Bridge, the Organizer, is also a fantastic utility for sorting and searching your image collection. It's actually a database that holds information about your photos, including key details such as the date they were taken, and you can add your own keyword 'tags' and other information. But like Bridge, Organizer also has useful processing options to offer, such as

Auto Smart Fix or Auto Red Eye Fix, which you can apply to one photo or several without even having to open them in Elements' editor.

This kind of helpfulness is built into Elements by design, and the philosophy extends to the other end of the process, outputting and sharing your images after you've edited and enhanced them. We've already touched briefly on printing in Chapter 1, but we'll finish with a quick look at Elements' Create and Share tabs, which offer a feast of ready-made templates and services that make it incredibly easy to share your shots in a variety of formats and media, online and on paper.

Adobe Bridge

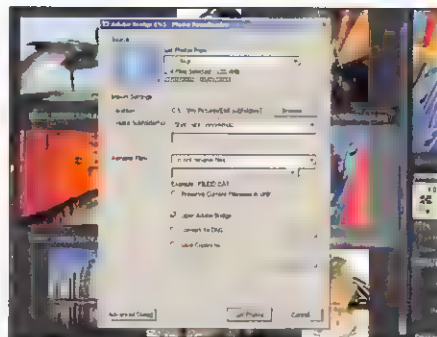
Bridge has had a makeover in CS3, with some significant new file management features



Change the colour

If you don't like the new charcoal Bridge interface, you can change it by going to **Edit > Preferences > General**. There's a selection of interface presets to choose from, and you can also change the brightness of the background – you'll find that you can preview photos more accurately against a lighter grey.

Bridge is the file cataloguing and preview tool in Creative Suite. Except for a new charcoal background, it may not look like much has changed in CS3, but there are some useful new features. The Adobe Photo Downloader makes it easier to manage the import of files from your camera or other sources, and a new Filter panel makes it easier to search your photos. It's also easier to add and edit Metadata such as keyword information, copyright details and technical notes to each photo, and to use this information to



Launch the Adobe Photo Downloader interface by going to **File > Get Photos from Camera**, and select a camera, memory card or other source

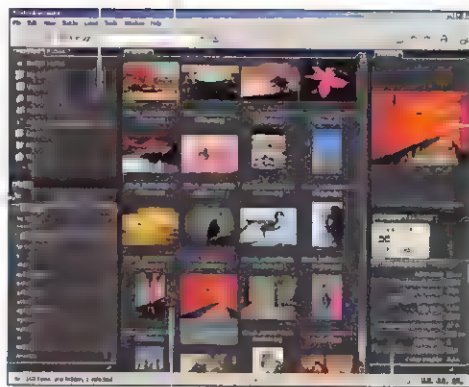
find the photos you want. As in CS2, you can customise the arrangement of the panels to suit your needs.

THE BRIDGE CS3 INTERFACE

Click a folder or location in the preview area to see its contents. You can nominate some folders as Favorites for faster access.

The new Filter panel shows a list of keywords and folder statistics, and also a Sort tab for speedy searching.

The main thumbnail preview area is the same as in CS2, but in CS3, like the other interface elements, you can drag it by its tab to a different position.



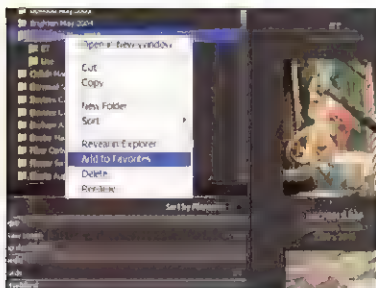
You can also access folders and other locations via this menu, and use the back/forward navigation buttons.

The Preview window features a resizable thumbnail. Click on this to activate a loupe tool for pixel-level previews.

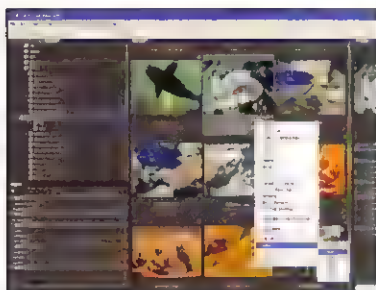
The Metadata and File Properties palettes show key information about each photo. You can add your own name and description here.

Using Bridge CS3

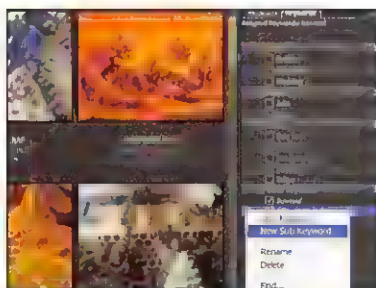
Discover the tools you need to keep your photo collection organised efficiently



1 Keeping files and folders in a logical order will help make you much more productive. Bridge's Favorites option is one of the most helpful shortcuts for fast photo access. Right-click/[Ctrl]-click a folder, and select Add to Favorites – it will now appear in the Favorites list, and you can navigate straight to it from there, or from the main folder menu.



2 When you select a photo, you'll see five dots below it. Click these to give your photo a star rating. You can also right-click/[Ctrl]-click a file to add a colour-coded label – go to Preferences > Labels to change the default labels. To search by rating or label, use the Filter panel. Click one of the entries in the Labels or Ratings drop-downs to show only the photos with that tag.



3 Keywords and sub-keywords are another way to group photos. In the Keywords panel, you can right-click/[Ctrl]-click these to rename or delete them. The defaults will give you an idea of what's possible, but you'll probably want to create your own. To add keywords to a photo, select the thumbnail and then tick one or more of the keywords.



4 Click on a thumbnail in the Preview panel to active a loupe magnifying tool. The top-left point of the tool indicates the area of the image that's magnified. You can click in the Preview to move this, or click and drag the loupe tool. Click inside the loupe to hide it.



Image stacks

Among the many new features in Bridge CS3, one of the most useful is the Stack option, which you can use to group similar files together under a single thumbnail. Select the files you want to stack, and then choose Stacks > Group as Stack. Click on the number at the top-left to preview all the files in a stack.



Quick search

Use the search field at the foot of the Keywords panel to show all the photos in your collection that have been tagged with a particular keyword. Type the keyword you're looking for into the field, and you'll see a list of all the photos that have been tagged with it. If you don't see the search field, you'll need to update to the newest version of Bridge. To do this, open the Help menu and select Updates. When the Adobe Updater dialog appears, close Bridge, then select the Bridge update and click Install Now.

Elements Organizer

In Elements 6 you can access editing, creation and sharing tools direct from the Organizer



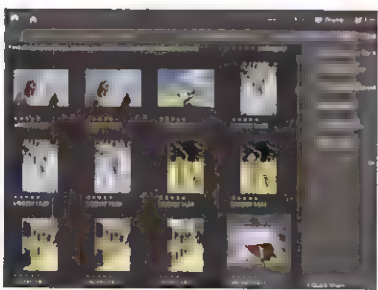
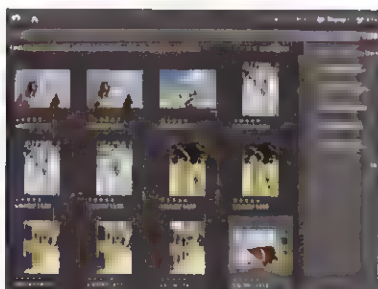
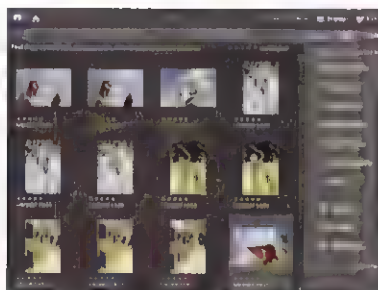
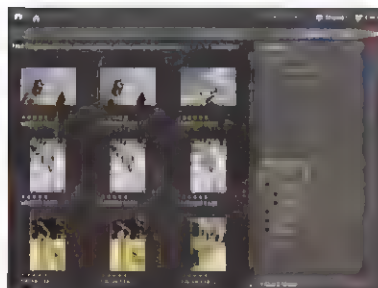
Vista skin

Elements 6 uses the new Vista look and feel, but is still compatible with Windows XP. If you're used to XP, you may be wondering where the menus have gone. Instead of a menu bar, they've been collected under an easy-to-miss double arrow in the middle of the top section of the interface. Click on that, and you'll see a familiar-looking list of menu features.



Edit or Organize?

If you click the Home icon, you'll see the Elements 6 welcome screen. This doesn't add any features you can't get to more quickly from within either the Organizer or the Editor, with one exception: the Start Up menu at the bottom-left. Use this to choose whether the Organizer or Editor appears when you start Elements 6.



Although Organizer is mostly about keeping your photo library organised, it includes other features too. At the top-right you'll see the four main feature buttons: Organize, Fix, Create and Share. Use these to switch between different feature sets – you'll see different options appear in the palettes on the right.



Fix includes quick-fix options to speed up the most common kinds of edits. The Auto edits in the top group are applied within Organizer. Click on a photo, click on the fix, watch the progress bar, and it's done. Note that edits are permanent – if you want to try different edits, use Undo or create a copy and work on that. The bottom group of buttons takes you to the Editor.



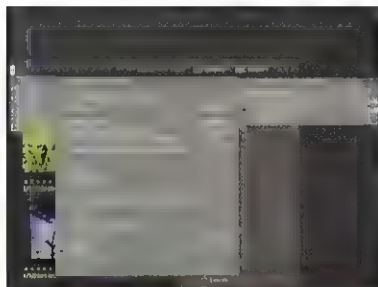
The Create options enable you to build a web gallery, order prints of photo books, and more. Click on More Options to see some useful CD/DVD artwork and greetings card tools. The Photo Book feature places your photo on top of various preset backgrounds and inside preset frames.



The Share options include the Online Gallery and Order Prints options that you'll find under the Create menu. You can also have your photos attached to an email automatically, or copy them to a CD or DVD for backup purposes.

Organising your images

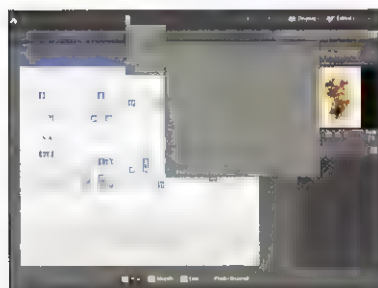
Manage your photo collection with Organizer's powerful tagging and searching features



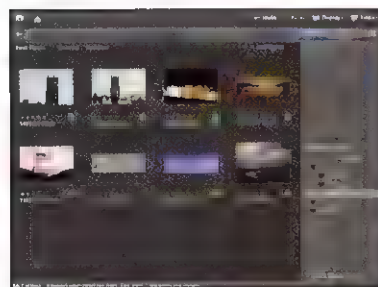
Some of the most useful tools in Organizer are hidden inside the main menu. Click the double arrow button in the middle of the menu bar and you'll see the options for loading photos into Organizer, as well as for making backups and creating prints. The new Photo Downloader keeps a list of attached devices, and can copy photos from a mobile phone with a single click.



The Photo Downloader is very similar to the one in Bridge CS3, but has a few extra features. It can add files from cameras, card readers and individual folders to the catalog. Use the Advanced Dialog to show all the features. You can optionally copy files to a unique sub-folder, automatically fix red-eye, and delete the source photos – a handy way to clear a memory card.



The Find sub-menu includes date range, caption/note, file name and other search options. These are often more useful than the keyword- and tag-based file search in the main Organizer window, so take some time to explore what's available here. There's even a visual similarity search, which tries to match photos by analysing them to find common visual features.



The keyword, rating and tagging system in Organizer is similar to that in previous versions and in Bridge. You can add star ratings and keyword tags, and also collect photos into albums. When you tick a keyword in the Keyword Tags palette you'll see only the photos tagged with that word; it's a useful feature, but it can be high maintenance if you take a lot of photos.



Show Map

The Show Map option under the Display menu loads a web-based Yahoo map which you can pin your photos to – as cameras start to include GPS technology, this feature will become automated, but for now it's a manual process. [F11] and [F12] respectively will show one and two photos at full screen resolution – use [Esc] to return to the normal view.



Folder Location

The Folder Location option under the Display menu may not work as you'd expect it to. You can't use it to add photos to an album, and it won't show folders that haven't been processed by Organizer – so it's really not very useful. To add photos, use the File > Get Photos and Videos option.

Creating and sharing

Elements has an impressive array of options to help you share your photos online and in print



Ordering prints

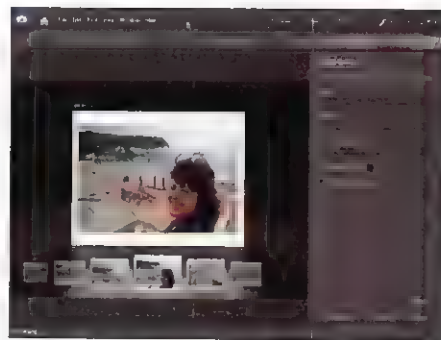
You can order prints of your photos via the Kodak EasyShare service. You can of course order prints from other online services, but the fact that EasyShare is integrated into Elements makes things particularly easy once you've signed up for the service. After you've uploaded your photos, you'll see a list of size options and prices, and your prints will usually be delivered within a few days.



Emailing your photos

The email options under the Share tab are also worth looking at. The attachment option works in the same way as attaching a photo from within your email software, but the Photo Mail option enables you to choose from a range of themed frames and layouts. Both options enable you to set up a list of recipients and add a message. If you used a web-based email service, you'll have to wait for your address to be verified before using these options, but this takes only a couple of minutes.

The Create options in Elements are simply a collection of web gallery designs, album pages, CD and DVD artwork layouts and other templates into which you can copy your photos with a few quick mouse clicks, to make outputting and sharing your images easy. You can use the preset options to keep things simple, but the templates really come into their own when you start customising them to your own designs. So, whether you're creating your own album pages or designing a web gallery, you can look on the



The Online Gallery options include some eye-catching animated and interactive designs, and you can have a gallery on the web in minutes

templates as just a starting point for sharing your photos and producing personalised projects.

CREATIVE OPTIONS

THE ONLINE GALLERY options are perhaps the most impressive. You simply select the images you want to include, choose a template and customise the design if required – some of the animated and interactive options are particularly good. If you don't have your own web space, you can put your gallery online in a matter of minutes using the free Photoshop Showcase service.

YOU CAN DESIGN and print photo book pages and photo collages. Choose from a range of designs tailored to themes such as baby, travel and celebration, or select a more basic design. Your project will be opened in the editor, where you can customise it with new backgrounds, frames and other elements before printing.

THE SLIDE SHOW option enables you to create shows complete with transitions and other special effects, and add music or commentary. You can output a slide show as a movie or PDF file, or burn it to DVD.

And the rest...

Here's a roundup of the most arcane, little-used and rarely-needed tools and commands...

Analysis

Photoshop CS3 collects under the Analysis menu a range of options for taking measurements in your image, including a Ruler and a Count Tool. In earlier versions there is a Measure Tool which shares a toolbox compartment with the Eyedropper and Color Sampler tools. See also Guides and Grids.

Apply Image

This Photoshop command enables you to blend the pixel data from a specific layer and channel in your 'source' image with a layer and channel of a 'destination' image. You can configure the results by altering blending mode and masking. We have never met anyone who can explain what this process is useful for.

Audio Annotations

Photoshop's Audio Annotation Tool enables you to add a spoken note on an image canvas. This can be useful in a studio or collaborative working environment. See also Notes.

Automate

Photoshop's File > Automate options are the program's counterparts of Elements' Guided mode. They make it simple to perform complex multi-step tasks such as cropping and levelling an image, or creating a PDF presentation, contact sheet, web gallery or 'Picture Package,' among others. See also Scripts.

DNG

Digital Negative, a public archival format for storing Raw files. DNG was developed by Adobe and is supported by a wide range of camera and software manufacturers.

Fade

The Edit > Fade command becomes available after you apply certain edits and adjustments, and enables you to reduce the effect of the change, in much the way that reducing layer opacity reduces the effect of an adjustment layer. However, the Fade command must be applied immediately after the adjustment; as soon as you select any other command or make any other edit, it disappears. For this reason, using adjustment layers is always a better option – you can return to them to fine-tune the adjustment at any later time.

Gamut Warning

The range of colours or 'gamut' that can be produced by a printer using the four-colour CMYK colour space is considerably narrower than the range that can be displayed on a screen in RGB mode. In Photoshop you can enable a warning that displays 'out of gamut' colours which will not print accurately, to help you assess what colour correction may be necessary to achieve the degree of colour accuracy you want from your output.

GIF (or .gif)

A type of image file format best suited to producing simple images for the web. Examples include logos, buttons and anything made up of just a few flat colours.

Guides and Grids

Guides and grids enable you to work with greater precision and are invaluable if you're turning your photos into cards, calendars, DVD covers or similar items. You can choose Guides, Grids & Slices from the Preferences menu in Photoshop, or Grid if you're using Elements. In both programs

you can adjust the colour, style and spacing of the gridlines, specify whether each grid section is subdivided, and many other settings. If the guides obscure your image as you're working, you can hide them by pressing [Ctrl]/[Command]+H.

JPEG (or .jpeg)

A type of image file format that gives a desirable combination of small file size and good-quality photo reproduction. It's commonly used in digital cameras to store the images that you take. The small file sizes also make it ideal for the web.

Notes

Photoshop's Notes Tool enables you to add a text note anywhere on an image canvas. This can be useful in a studio or collaborative working environment. See also Audio Annotations.

Pattern Stamp

A variant of the Clone Stamp Tool found in the same toolbox compartment. Instead of painting pixels which you sample from another part of the image, the Pattern Stamp paints with a preset pattern which you select from the preset picker. It can be effective for creative effects but is of limited use in everyday photo-editing.

Proof Setup

In a colour-managed workflow, you often need to be certain how the colours in your image will print. Photoshop enables you to 'soft-proof' your files on-screen – in other words, it simulates the results of converting your file to the CMYK colour space used in commercial printing. The View > Proof Setup options enable you to configure exactly how the colour

simulation is handled. See also Gamut Warning.

PSD (or .psd)

Photoshop's own file format, which preserves elements such as layers and channels. If you're editing an image file, it's sensible to save it as a .psd in order for the changes you've made to remain editable when you next open it.

Raw file

Raw files are unprocessed image files generated by digital cameras that support the format. Rather than being processed 'in-camera', the data is left uncompressed and unedited until it's opened in an editing program such as Photoshop or Elements using the Adobe Camera Raw plug-in.

Save For Web

Select this in Photoshop's File menu and the program hands over to the ImageReady engine so you can decide the best file format, compression settings, colour palette and other parameters for your particular online needs. This is by far the most controllable way to export an image in a format suitable for websites. In CS3 this has become Save For Web & Devices, with extra options for saving files to be used on mobile phones and other devices.

Scripts

Photoshop's File > Scripts menu offers these as another way of automating complex tasks. See Automate.

Slice Tool

Photoshop's Slice Tool and the related Slice Select Tool enable you to create and then manipulate image slices for the web. See also Save For Web.

On your CD

Featured resources

- ☐ **Serif DrawPlus 6.0**
(FULL PRODUCT, PC only)
- ☐ **Fluid Mask 3.0.2** (30-day trial for Mac & PC)
- ☐ **Exposure 2.0** (30-day trial for Mac & PC)
- ☐ **AutoEye 2.0** (30-day trial for Mac & PC)
- ☐ **Lynda.com CS 2 video training** (Mac & PC)

Here's how to get the most from the packed disc that accompanies your Focus Guide

To access the resources and files on this disc, including the video tutorials and our selection of superb software to try out, first insert the CD into your drive. Whether you're using a Mac or a Windows PC, the disc will work equally well. If the disc interface doesn't run automatically, see the opposite page to find out how to start your installation manually.

Before you go on

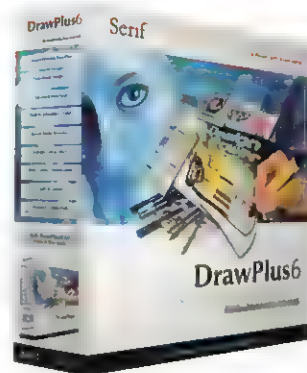
The first item that should appear on your screen is the disclaimer

window: here you'll need to click on 'I Accept'. Please remember that this disc has been scanned and tested at all stages of production, but – as with all new software – we still recommend that you run a virus checker before use. We also recommend that you have an up-to-date backup of your hard disk before using this disc. Future Publishing does not accept responsibility for any disruption, damage and/or loss to your data or computer system that may occur while using this disc or the data and programs on it. Please

SERIF DRAWPLUS 6.0 (FULL PRODUCT FOR PC)

A complete drawing and graphics suite

DrawPlus 6.0 is a vector graphics, illustration and drawing suite with a unique combination of simple-to-use drawing aids and high-end capabilities. It has all you need to create superb graphics. If you're new to illustration software you'll love the ToolTips, context-sensitive hints and colourful QuickTours. The tabbed Studio stores hundreds of preset lines, fills, transparencies, fonts and design elements, and is always ready to use. DrawPlus 6.0 can even automatically trace bitmap images such as digital photos and transform them into fully editable vector images, so that you can really turn shots from your digital camera into works of art!



With DrawPlus you can create outstanding vector drawings, graphics and animations



consult your network administrator before attempting to install software on a networked PC.

Installation

Once the CD is running you'll see a range of options in the menu bar. Click on a link to access the section you require. Some files may need to be extracted from a Zip archive; try using WinZip (www.winzip.com) to do this if your version of Windows doesn't have a de-archiving utility. Our video tutorials need the latest QuickTime Player, from [www](http://www.apple.com/quicktime/download).

apple.com/quicktime/download.

If you have a query about your disc, you can email support@futurenet.co.uk for help. To talk to a member of the team, call 01225 822743.

Note that we can only provide basic advice on using the disc interface or installing the supplied software. We cannot give in-depth help on specific programs (try the maker's website), or on your system configuration.



Starting your installation manually

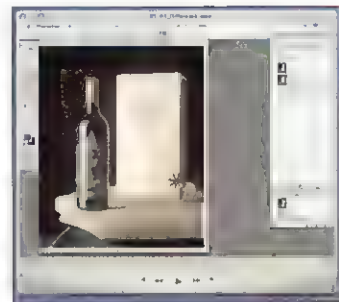
PC users: click on the Windows Start button and click Run. Then click Browse and go to the CD directory in My Computer. Look for a file called PFGi.exe and double-click it. Then click OK in the Run dialog, and the disc should then load up.

Mac users: Double-click the disc icon, then double-click PFGi-OSX to launch the interface.

EXCLUSIVE VIDEO TUTORIALS FROM LYNDA.COM

CS2 tips and techniques from Adobe's Russell Preston Brown

Lynda.com is an award-winning provider of educational materials, including the Online Training Library, CD- and DVD-based video training, Hands-On Training books, and events for designers, instructors, students, and hobbyists. On the disc you'll find over 75 minutes of Photoshop CS2 techniques and tips presented by Russell Brown, senior creative director at Adobe. Topics include the History palette, Smart Objects, Smart Sharpening, and more. As a Photoshop Focus Guide reader you can try out the rest of Lynda.com's vast library of constantly updated online training with a free 24-hour visitor's pass – visit www.lynda.com/freepass/pfg/1107



To view our tutorials you'll need to have Apple's QuickTime player – get the latest version at the URL below

www.apple.com/quicktime

Also on the disc



AutoEye 2.0

Also on the disc is a 30-day trial of AutoEye 2.0 from Auto FX Software. This fantastic application automatically improves digital images by rebuilding colour detail, sharpness and image vibrancy. AutoEye uses a unique set of adjustment methods which produce a higher quality result yet are amazingly easy to use. This is a fully-functional 30-day trial for Mac and PC.

A breath-taking collection of plug-ins and add-ons for professional image editing

In the Software section of your disc you'll find a collection of top plug-ins for Photoshop including a trial of Alien Skin Software's Exposure 2.0, the award-winning plug-in that gives digital photos the look and feel of film. Alien Skin has also provided a trial of BlowUp, the high quality image resizing plug-in that preserves smooth, crisp edges and lines. Also from Alien Skin is Image Doctor, a set of powerful image-correction filters, and Snap Art, which creates beautiful, natural media artwork in a single step. All

are 30-day fully-functional trials for Mac and PC.

We've also included NoiseNinja 2.0, created by PictureCode LLC, a very effective solution for removing noise and grain from digital photos and scans. It's an essential tool for anyone shooting in low-light or fast-action situations including news, wedding and sports coverage where high ISO photography is required and the resulting noise compromises the image. Some features in this trial version are restricted, and images are watermarked when you save them.

FLUID MASK 3.0.2 (TRIAL FOR MAC & PC)

The latest version of Vertus Tech's fantastic image cut-out tool

Vertus Tech Fluid Mask 3 is designed for photographers, image editors, graphic designers and anyone who takes digital image editing seriously. It's one of the fastest masking tools available and can turn previously tedious tasks into a process that's efficient to complete and fun to do. Fluid Mask 3.0's streamlined interface and workflow instantly reveals the key edges in an image and provides comprehensive, easy-to-use tools that make light work of difficult-to-see edges and tricky areas. The final result is a professional-quality cut-out with a natural edge, with blur and contour preserved.



Fluid Mask 3 is faster, easier to use, and includes more powerful and accurate blending for unbeatable cut-outs

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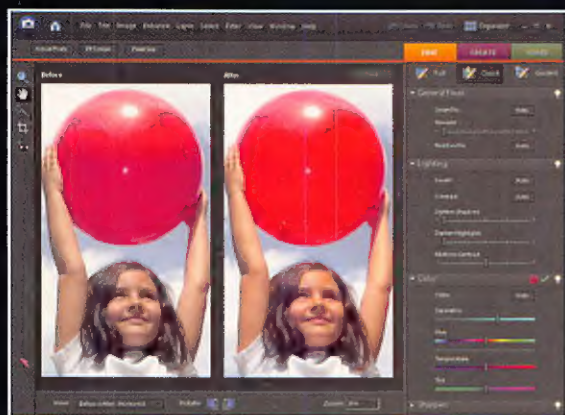
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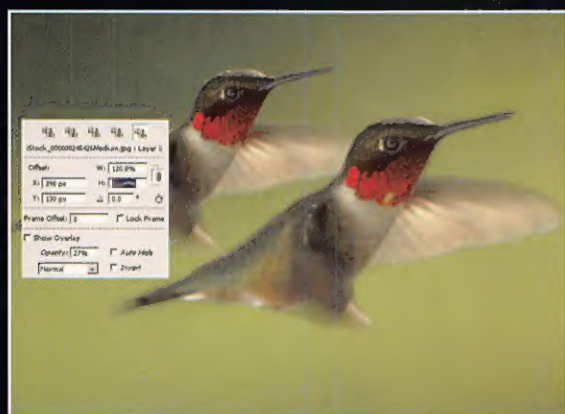
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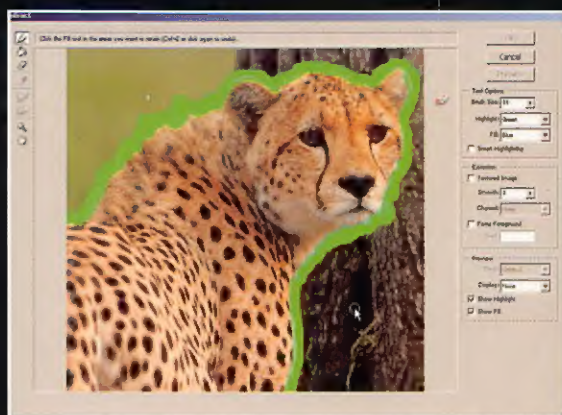
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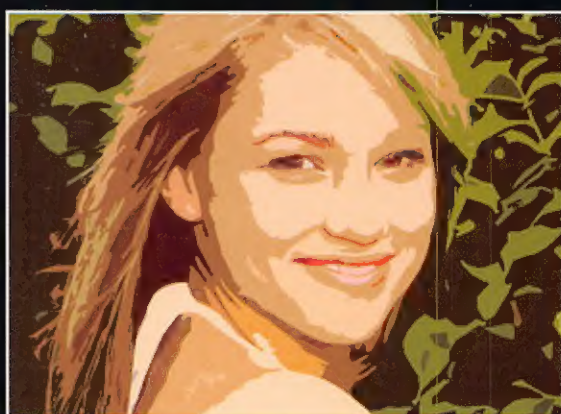
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